

The New England Journal of Medicine

VOLUME 198

MARCH 1, 1928

NUMBER 2

NEW ENGLAND SURGICAL SOCIETY

FRACTURES OF THE ODONTOID PROCESS

BY ROBERT B. OSGOOD, M.D., F.A.C.S. AND CHARLES C. LUND, M.D.

WE ask your consideration of fractures of the odontoid process for three reasons. First, because the rarity of their occurrence in inverse ratio to the gravity of their symptoms. In Jefferson's series of 13 cases 8 died, an immediate or delayed result of the fracture and 4 died from associated conditions, and only one doubtful case recovered.

Second, because an early recognition of the condition may save life and make possible the pursuit of happiness. The methods of immediate treatment are definite, and late treatment is without hope.

Third, because one of the writers will report his own case and demonstrate his fortunate encounter.

We shall first summarize the literature under the headings of Occurrence, Causation, Complications, Outcome, and Treatment. We shall then discuss signs and symptoms and describe the methods of treatment which we have found efficient in the early and late cases, concluding with the personal report of a personal case.

REVIEW OF LITERATURE

Occurrence

A fairly painstaking review of the literature of fractures of the odontoid process of the axis has discovered about 55 reported cases and added our new case, making a total of 56. Forty of these were analyzed by Frisch¹ in 1912. Jefferson¹¹, studying fractures of the atlas found 4 cases of fractures of the odontoid as a complicating injury. Hartwell¹⁰ reviewing 133 cases of fracture of the spine at the Massachusetts General Hospital from 1900-1914, encountered one odontoid fracture, and in Osgood's (unpublished) series of 222 fractures of the spine found in the records of the Boston City Hospital and the Massachusetts General Hospital from 1915-1925, there were 2 cases of fractured odontoid.

Causation and Mechanism

In 60 per cent of the reported cases the patients sustained falls striking upon the head.

In 20 per cent they were struck by heavy objects.

In 20 per cent the cause is not stated. One case seems to have been definitely due to a chiropractic "adjustment".

Wusthoff¹², after an anatomic and postmortem study, makes certain pertinent points as to the probable mechanism of the fracture.

1. The weakest and most vulnerable portion of the odontoid is its base near its point of junction with the body of the axis.

2. The odontoid process is stronger than the rudimentary body of the atlas.

3. The odontoid process is weaker than the combined strength of the articular and check ligaments.

4. Sometimes the check ligament holds and the odontoid fractures. At other times the check ligament ruptures and the atlas dislocates forward.

5. Blows on the back of the head with hyperflexion commonly produce a forward dislocation of the atlas, but if the check ligament holds may fracture the odontoid at its base as well.

6. Blows on the forehead with hyperextension may produce a backward dislocation and a fracture of the odontoid, but are more likely to fracture the slender posterior arch of the atlas as its rudimentary spinous process impinges on the heavy spinous process of the axis.

7. Blows on one side of the head with extreme rotation are more likely to cause the relatively frequent rotary dislocations of the atlas on the axis.

Complications

The common complications of fractured odontoid are lesions of the atlas and associated with most odontoid injuries is a forward dislocation of the atlas of greater or less degree. In literature we have found only one case in which it was definitely stated that the main atlantoaxial articulations were intact. In fractures of the odontoid associated with dislocation of the atlas there is usually a very definite displacement of the loose fragment of the odontoid. Nerve root and cord pressure complications are very common and often cause death.

Outcome

Only 13 of Frisch's 40 patients lived. Only two deaths are recorded in the 14 recently re-

ported cases and one of these died 32 years after the original injury. We suspect that the habit of reporting fatal cases is not as common a habit as formerly. The mortality in the whole series is over 50 per cent. Of the 27 patients that have recovered, three who died of intercurrent disease have shown firm union at autopsy. Only 12 of the recovered cases have been complete cures. The remainder complained of pain in the head or neck or showed muscle spasm at their last visit and certain ones demonstrated varying degrees of spastic paralysis. Of the 29 fatal cases, only six deaths occurred as an immediate result of the injury. This fact needs emphasis and affords hope, but pleads for immediate intelligent treatment. Death in four of the fatal cases was due to intercurrent disease (pneumonia, nephritic, tetanus, erysipelas) before recovery from the neck injury. Seven died at periods varying from a few hours to a few months as a direct result of the immediate paralysis.

Ten patients, and to these we would direct your special attention, died of a paralysis not coming on at the time of injury. Some slight later accident trivial in character, such as sneezing or a quick turn or lift of the unsupported head, brought on the fatal paralysis in many, and in the rest a slowly developing paralysis took its toll.

In none of the reported cases of cures have there been published satisfactory roentgenograms of the end-result, so that no idea of the amount of bony union or eventual position can be gained. The return of varying degrees of function suggests union or at least stability. The general impression that fractures of the odontoid never unite is evidently erroneous.

Treatment

Manipulation, traction, and immobilization, partial or complete, have been the routine methods of treatment. One patient without cord symptoms, for whom only rest in bed for two months with aspirin for pain was prescribed, had a "normal" range of motion in one and one-half years and only slight residual pain. Two patients in the recent series were manipulated under gas anaesthesia with apparent benefit and eventual, partial recovery. One patient manipulated his own head with immediate and permanent relief of pain.

In general, these methods, unless a rather prolonged complete immobilization was maintained, have been inefficient and have resulted in incomplete recovery. One of the reported deaths in the recent series occurred in a patient treated by an immobilization and jury mast traction apparatus. His friends, not being pleased with the cosmetic effect of the appliance, removed it. A paralysis ensued from which he subsequently died.

Only three reports of open operation have been found. Each of these patients exhibited pressure symptoms and was losing ground under

conservative treatment. The first case was that published by Mixer and Osgood in 1910 of an old fractured and displaced odontoid with forward dislocation of the atlas. They exposed the posterior arch of the atlas and the spinous process of the axis by a midline linear incision from the occiput downward. By a digital backward push on the anterior arch of the atlas through the pharynx and a backward pull on the posterior arch of the atlas by means of a hook between the cord and the bone, it was possible to partially reduce the forward luxation. They then anchored the atlas to the axis by means of a strong braided silk passed around the posterior arch of the atlas and tied under tension beneath the hooked bifid spinous process of the axis. Ely² has since successfully repeated this procedure in a forward dislocation of the atlas, associated with fracture of the odontoid. The third reported open operation for the relief of cord pressure symptoms associated with fracture of the odontoid was performed by Ruszynski¹⁷. It consisted of a laminectomy with excision of the posterior arch of the atlas through a T-shaped exposure horizontal over the occiput, vertical down the neck. There was no attempt made to reduce the dislocation or anchor the atlas.

Symptoms

The outstanding symptoms have been pain in the head and neck and spasmodic limitation of motion. Pain is relieved, sometimes completely, by immobilization, and exaggerated, sometimes excessively, by voluntary or passive motion. Seward and Rogers¹⁸, reporting three cases of fractures in the region of the first two vertebrae, call attention to the involvement of the three occipital nerves with anaesthesia, paraesthesia, or hyperaesthesia in the areas of their distribution. The second or great occipital nerve emerging between the atlas and the axis is most commonly irritated or pinched in uncomplicated fractures of the odontoid, and pain streams up the occiput often intermittently and often intensely. These same signs may obviously be present in atlanto-axoid dislocations without fracture. There is occasionally a cutaneous branch of the suboccipital nerve from the first cervical emerging over the arch of the atlas. The distribution is over the back of the head. The small occipital also arises from the second cervical and is distributed to the scalp more laterally.

These nerve symptoms are important symptoms, but their importance lies in the fact that they point only to organic injury in the region of the first two cervical vertebrae. Roentgenologic study should immediately be made in order to determine whether this injury is a pure dislocation, a pure fracture, or a combination or complication of several injuries.

Symptoms and signs which perhaps have not been sufficiently stressed in literature are those which are evident in the posterior paravertebral region. The patient will often complain of the presence

of a bunch or ledge in the back of his throat and will experience difficulty in swallowing. Pain in swallowing may be a symptom even when no displacement can be appreciated and palpation shows no bulging of the pharyngeal wall. Pal-

fractures of the odontoid with forward and downward displacement of the atlas, the transverse ridge of the whole anterior arch of the atlas can be felt by the examining finger. We hardly need to call attention to the fre-



FIG 1 Case of Dr E S Murphy Dixon III Fresh fracture of odontoid at base

pation of the posterior pharyngeal wall will reveal in rotary dislocations of the atlas a greater prominence on the one side than on the other as the right or left lateral mass of the atlas is projected forward. When the whole atlas has assumed an anterior position, as in simple forward dislocations of the atlas on the axis or in

quent immediate symptoms and signs of pressure on the spinal cord and brain stem. These, of course, vary from sudden death to complete or partial paralysis. The latter may be hemiplegias, diplegias, quadriplegias, or of the Brown-Séquard type.

The late symptoms and signs are those upon

which the emphasis should be laid. They are often obscure in nature and gradual in progression, but they need attention which is acute and treatment which is definite. They consist of signs of peripheral nerve involvement or of cord pressure. They are caused by excessive callus formation, by the irritation of abnormal mobility, or by the late development of an osteomyelitis. The penalty which they may exact is a causalgia which is distressing or a transverse myelitis which is lethal.

Treatment

The essential principle of treatment is complete immobilization. In the literature manipulation plays an important role and it seems justifiable to attempt the reduction of a marked displacement disclosed by a roentgenogram if it can be accomplished with reasonable safety. Signs of cord pressure are commonly lacking or are intermittent. Fortunately, there is much more room for the cord in this region than in any other, the posterior arch of the atlas has a wide span.

We direct your attention to the real danger of any forceful and all unintelligent manipulation. Patients with fractures of the odontoid have had a sudden exitus from sneezing or coughing, days and weeks after the injury.

In the absence of serious pressure symptoms complete immobilization is the safest procedure in all cases in which a fracture of the odontoid is suspected, even if the exact nature of the injury and the amount of displacement must be determined later. Pillows, sandbags, the application of circular plaster bandages are inefficient and unsafe methods of continued treatment. We believe the best method is to make as quickly as possible a bivalved cuirass of plaster or leather whose posterior half shall extend from the vertex to the low thoracic spine and whose anterior half shall extend from the chin to well below the nipples. To afford complete immobilization, both these halves must be accurately moulded to the posterior and anterior contours of the body, especially of the scapulae and clavicles, the neck and the chin.

The mould for such a cuirass may be obtained with the help of several pairs of strong hands to steady the head and body by laying the greased body and cotton covered head of the patient in a lake of cool plaster cream poured into a rubber sheet covering the bed, the sides of the lake basin being formed by sandbags or pillows. When the posterior half has hardened and its wide projecting piazzas have been greased, the anterior mould is made by pouring plaster cream over the front of the body and neck, including the chin. Care must be taken in pouring not to allow the edges of the anterior half to overlap the piazzas of the posterior half, else it will be difficult to lift the anterior portion off when it has set. Since plaster acquires considerable heat in the setting process, too long delay

may mean burning the patient's skin. The torso moulds are apposed and filled and the sculptured torso is ready to serve as a model for a permanent plaster or leather cuirass. This may be made deliberately, since there is no danger of further displacement of the torso's odontoid. Plaster cuirass can be ready in twelve hours; stiffened leather and reinforced steel cuirass takes longer to prepare. The patient's head and neck are protected in the meantime by light traction, sandbags, pillows, and an efficient Thomas collar.

We believe this immobilization should be maintained until danger of displacement slight or union is assured. We have little to borrow from our advice upon, but in the two cases we have treated we have maintained complete immobilization for three months and then substituted the less complete immobilization of an efficient Thomas collar for three months more.

In the old cases with causalgia or beginning cord pressure symptoms, we believe an efficient Thomas collar with an occipital head portion and a forehead strap will afford sufficient protection, for there is little danger of sudden body movement causing sudden displacement. The length of time this immobilization should be continued must vary with the individual case, but we can visualize a condition in which some protection of this sort would be worn during the remainder of the patient's life if no operative procedure could be devised to afford relief.

OPERATIVE PROCEDURE

Operative procedures have been planned to relieve pressure. There has been at least one successful case of laminectomy. No direct operative replacement of the separated odontoid fragments has, as far as we have reviewed the literature, been attempted. The slipping forward of the atlas is a very real danger in many cases and if it slips beyond a certain point, cord pressure and death will necessarily take place. We believe in these cases there is a place for the procedure of Mixer and Osgood above referred to. Knowing as much as we now know of the efficiency of living fascial sutures, it would probably be better to pass a strip of fascia instead of silk around the posterior arch of the atlas and anchor it to the hooked spinous process of the axis.

The keynote of successful treatment would seem to be, in the early cases, immediate immobilization, at first complete and later almost complete, maintained for perhaps six months in order to escape the frequent serious and slowly progressive changes which are sometimes lethal. In the older cases also, immobilization varying in completeness and length of administration is essential unless operative procedures offer a shorter and surer chance of relief.

COMMENT

1. After falls upon the head or blows upon the head, fractures of the odontoid process and

lesions of the upper two cervical vertebrae should be suspected when there are signs and symptoms of limitation of neck motion and occipital pain, even if no spinal cord or nerve root symptoms are present

4 Open operation offers a chance of permanent betterment in certain cases exhibiting persistent symptoms and associated with forward displacement of the atlas

There follows the report of a personal case

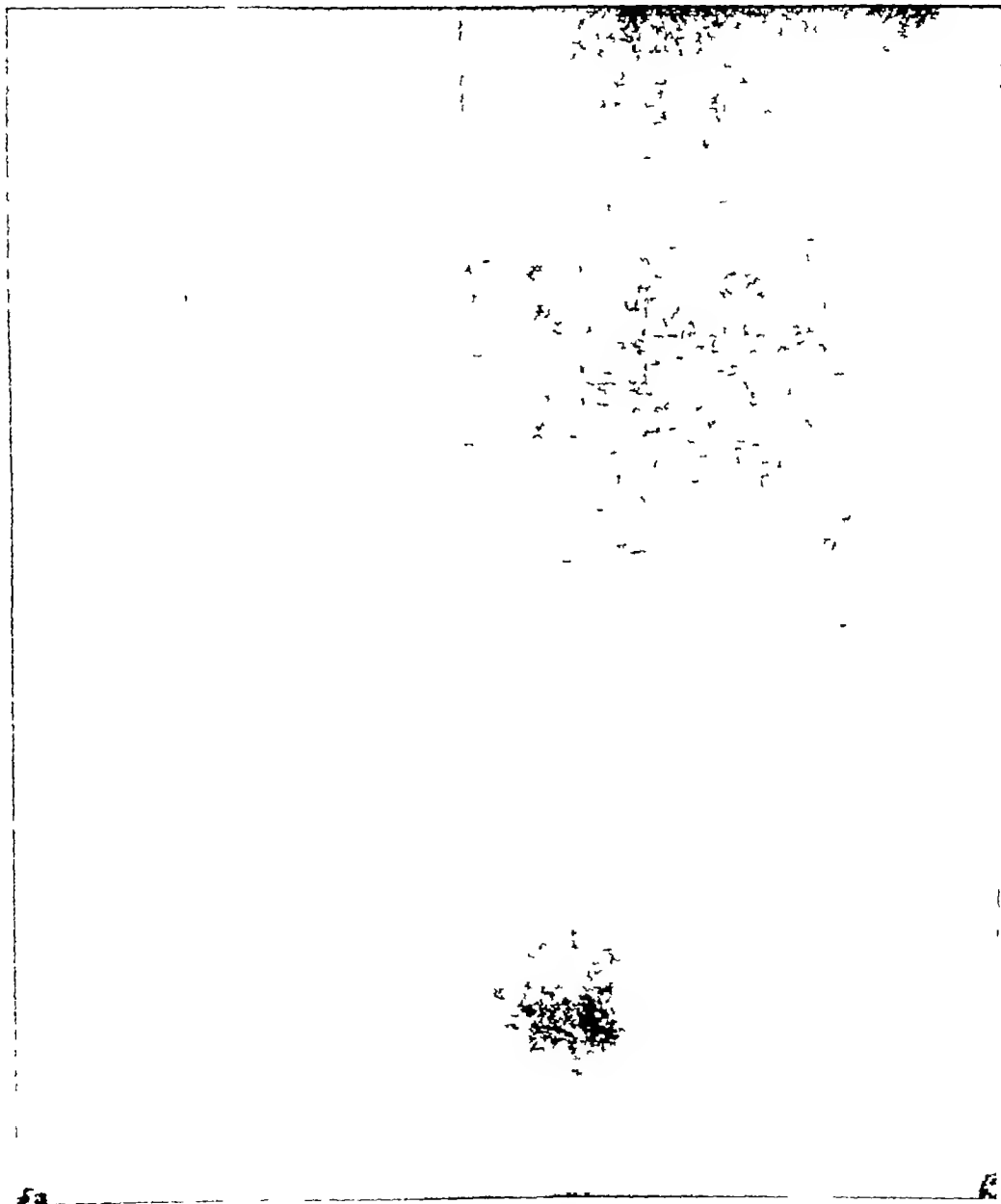


FIG 2 Same case as Fig 1 two years later Recovery and union

2 Clear roentgenograms taken laterally and obliquely through the wide open mouth are essential in establishing the diagnosis

3 Complete immediate and prolonged immobilization is essential if present relief is to be afforded, subsequent return of function is to be favored, and dangerous sometimes fatal, sequelae are to be avoided

C C L Age 30 Occupation surgeon. Involved in an automobile collision on November 17 1925 The Ford sedan in which the patient was riding was struck by a heavier car going at a right angle to it and making an estimated speed of forty miles an hour

The car was immediately righted by the bystanders and the patient who was not unconscious, was assisted out. He was able to stand and walk un-

ported, but noticed severe pain in the back of his neck. After a rather painful ride in a taxi he walked into the accident ward of the hospital and lay down on the table. Once there he had no desire or inclination to lift his head again. After examination by Doctors Torr Harmer and J. C. Hubbard a cardboard Thomas collar was made and Roentgen examination done. At this first physical examination pain, tenderness, and spasm in the neck were noted, the spasm being such that the head could not be moved in any direction except in the slightest possible degree. There was no prominence felt in the pharynx and no cord pressure symptoms were noted. The rest of the examination was negative. There were not even any cuts or bruises. The first roentgenogram, the antero-posterior view through the mouth was unsatisfactory.

The next morning the patient's condition was about the same except that he had severe dysphagia. Even the swallowing of a little saliva caused painful, spasmodic contractions of the pharyngeal muscle, lasting several seconds. He also noticed during the night that there was a large area of anaesthesia on the left side of the occiput.

During the next few days the pain decreased slightly but the spasm very little. Lying in bed with the head supported by a collar was the only treatment. Sandbags were tried but were not satisfactory. After the first day the patient was able to turn on his side, by doing so very slowly and without help and, although the turning was painful he received some temporary relief from the change of position.

After a week more roentgenograms were taken and the antero-posterior view showed positively that there was a fracture of the odontoid. Dr. Osgood was called and immediately set to work to make a leather cuirass using the methods described above. This process was not uncomfortable to the patient who found his first real relief from pain while lying in his lake of plaster. As soon as the cuirass was applied about a week later, there was tremendous relief from pain. In spite of its uncomfortable appearance it was not really uncomfortable. It was worn day and night for three months. As soon as it was applied the patient began gradually to sit up in bed and was out of bed in a week. After three months it was removed and a moulded leather Thomas collar applied. At this time daily gentle massage and exercises began, which were very gradually increased during the next two months. I might say here that the patient began to do a little work within six weeks after putting on the cuirass—that is eight weeks after the accident,—and actually did a cholecystectomy three months and a half after the accident, while still wearing the cuirass. The patient and surgeon both survived.

During the last month of wearing the Thomas collar the patient was allowed to remove it for gradually increasing periods and by this time had almost normal motions in the neck, left rotation being the last to return completely.

From the first application of the cuirass until the present time the patient has had no pain worth mentioning. Roentgen ray examinations were made at intervals of one month to follow the course of healing until removal of the Thomas collar, another set being taken at the end of one year. This latter series will be shown to demonstrate the anatomical end result.

Our thanks are due to Dr. Torr W. Harmer for first aid treatment and to Dr. J. C. Hubbard for his care during the first week, also to Doctors George W. Holmes and Lawrie B. Morrison for their many painstaking Roentgen ray examinations.

SCHEMATIC SUMMARY OF RECENT ARTICLES UNDER THE HEADINGS OF ETIOLOGY, DIAGNOSIS, SIGNS AND SYMPTOMS, CORD COMPLICATIONS, COURSE AND TREATMENT, AND RESULT

A Etiology

Case No	Author	Notes
1	Ruszyński	Swimming struck by diver
2	Naegeli	Fell from load of hay
3	Forbes	Slipped walking on beach
4	Blaine	Claimed to be due to chiropractic adjustment
5	Le Breton	Horse sat on neck
6	Nicholson	Struck by falling tree
7	Frisch	Fell to ground
8		Fell down steps
9	Edwards	Being carried was dropped (age 4)
10	Osnato	Fell to back of head
11	Ely	Fell while skating
12		Fell 9 feet into elevator shaft
13	Mixter and Osgood	Fell from tree Struck head on limb on way to ground
14	Osgood and Lund	Automobile collision
15	Wüsthoff	Fell from load of bushes
16	Elliot and Sachs	Fell from scaffold

B Diagnosis

Case No	Author	Frac Odontoid	Dislocation of Atl-Occipital Jt
1	Ruszyński	Yes	Yes
2	Naegeli	Yes	Yes
3	Forbes	Yes	Yes
4	Blaine	Yes	Yes
5	Le Breton	Yes	Slight
6	Nicholson	Yes	Slight
7	Frisch	Yes	Slight
8		Yes	No
9	Edwards	Yes	Yes
10	Osnato	Yes	Yes
11	Ely	Probably	Yes
12		Probably	Yes
13	Mixter and Osgood	Yes	Yes
14	Osgood and Lund	Yes	No
15	Wüsthoff	Yes	Yes
16	Elliot and Sachs	Yes	Yes

C Signs and Symptoms

Case No	Author	Notes
1	Ruszyński	Pain and stiffness in neck Hemiplegia of Brown Séquard type from start gradually became worse for two months
2	Naegeli	Pain and stiffness of neck Later, one month after first course of treatment paralysis
3	Forbes	Pain and stiffness of neck Dysphagia Hyperaesthesia of occipital nerve
4	Blaine	Pain and stiffness of neck Paralysis later after treatment interfered with by patient's friends
5	Le Breton	Pain and stiffness in neck
6	Nicholson	Pain and stiffness in neck
7	Frisch	Pain and stiffness in neck

8	Frisch	Pain and stiffness in neck. Paraesthesia of occipital nerve	13	Mixter and Osgood	Pain and stiffness in neck. Dysphagia at first. Prominence of atlas in throat
9	Edwards	Pain and stiffness in neck.	14	Osgood and Lund	Pain and stiffness in neck. Dysphagia at first. Anaesthesia followed by paraesthesia of occipital nerve
10	Osnato	Pain and stiffness in neck. Immediate complete paralysis. Gradual improvement after three days			

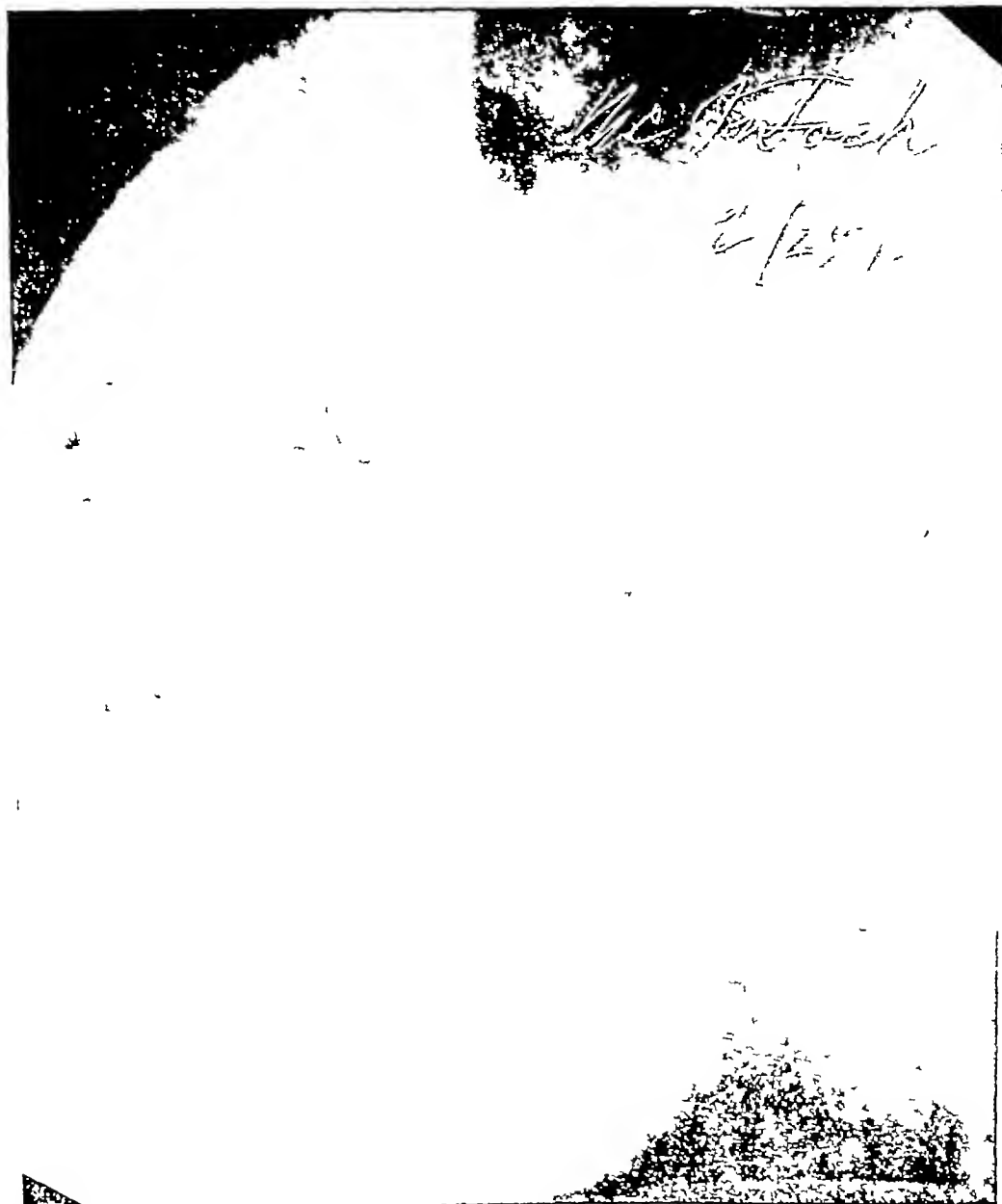


FIG 3 Twenty year end result in Mixter and Osgood case of fracture of odontoid and forward dislocation of atlas. Symptoms relieved by anchoring posterior arch of atlas to spinous process of axis

11	Ely	Pain and stiffness in neck. Prominence of atlas in throat.	15	Wüsthoff	No prominence of atlas in throat. Pain and stiffness in neck.
12	Ely	Pain and stiffness in neck. Prominence of atlas in throat. Paralysis after two months	16	Elliott and Sachs	Late paralysis. Mass in throat. Pain and stiffness in neck—intermittent. Slight

paralysis — intermittent
First injury 32 years be
fore final one

D Cord Complications

Case No	Author	Notes
1	Ruszyński	Immediate Brown Séquard hemiplegia
2	Naegeli	Late quadriplegia
3	Forbes	None
4	Blaine	Late quadriplegia
5	Le Breton	None
6	Nicholson	None
7	Frisch	None
8	Frisch	None
9	Edwards	None
10	Osnato	Immediate quadriplegia

3 Forbes

4 Blaine

out support One month later severe paralysis, then traction for three months with progressive improvement
No improvement in six weeks observation Then successful reduction under general anaesthesia Plaster for two weeks and leather collar for three months
Put in plaster with jury mast Interference by friends Returned ten months later with quadriplegia No further treatment mentioned Died in five months



FIG 4 End result in Mixer and Osgood's case 40 years after accident
a Lateral aspect
b Largest amount of possible voluntary rotation to right
c Largest amount of possible voluntary rotation to left

11	Ely	None
12	Ely	Late quadriplegia
13	Mixer and Osgood	None
14	Osgood and Lund	None
15	Wüsthoff	Late quadriplegia
16	Elliott and Sachs	Late quadriplegia

E Course and Treatment

Case No	Author	Notes
1	Ruszyński	Hemiplegia gradually became worse in two months conservative treatment Then laminectomy of posterior arch of atlas Then steady improvement
2	Naegeli	No improvement in three weeks observation Then attempted reduction, followed by traction for two weeks Then walked with

5 Le Breton

6 Nicholson
7 Frisch

8 Frisch
9 Edwards

10 Osnato

11 Ely

After six days, patient manipulated his own head with relief of severe pain Plaster collar for three months
None described by author
Rest in bed and aspirin with gradual improvement for two months
Rest in bed
Manipulation under nitrous oxide Plaster for six weeks Gradual improvement
Rest in bed one month Gradual improvement Massage of extremities Casual for nine months Then Calot jacket for five months with steady improvement

12 Elv

Plaster for two weeks, then none for six weeks at which time paralysis appeared. Then Calot plaster for six weeks during which time paralysis cleared. Two weeks after this knocked down and paralysis recurred. Collar jacket applied and paralysis improved. Plaster off

Thomas collar in place of plaster with immediate increase of pain. Operation done consisting of pulling posterior arch of atlas back with assistance of pushing on anterior arch of atlas in pharynx. Posterior arch of atlas tied to spine of axis with silk. Leather cuirass worn for

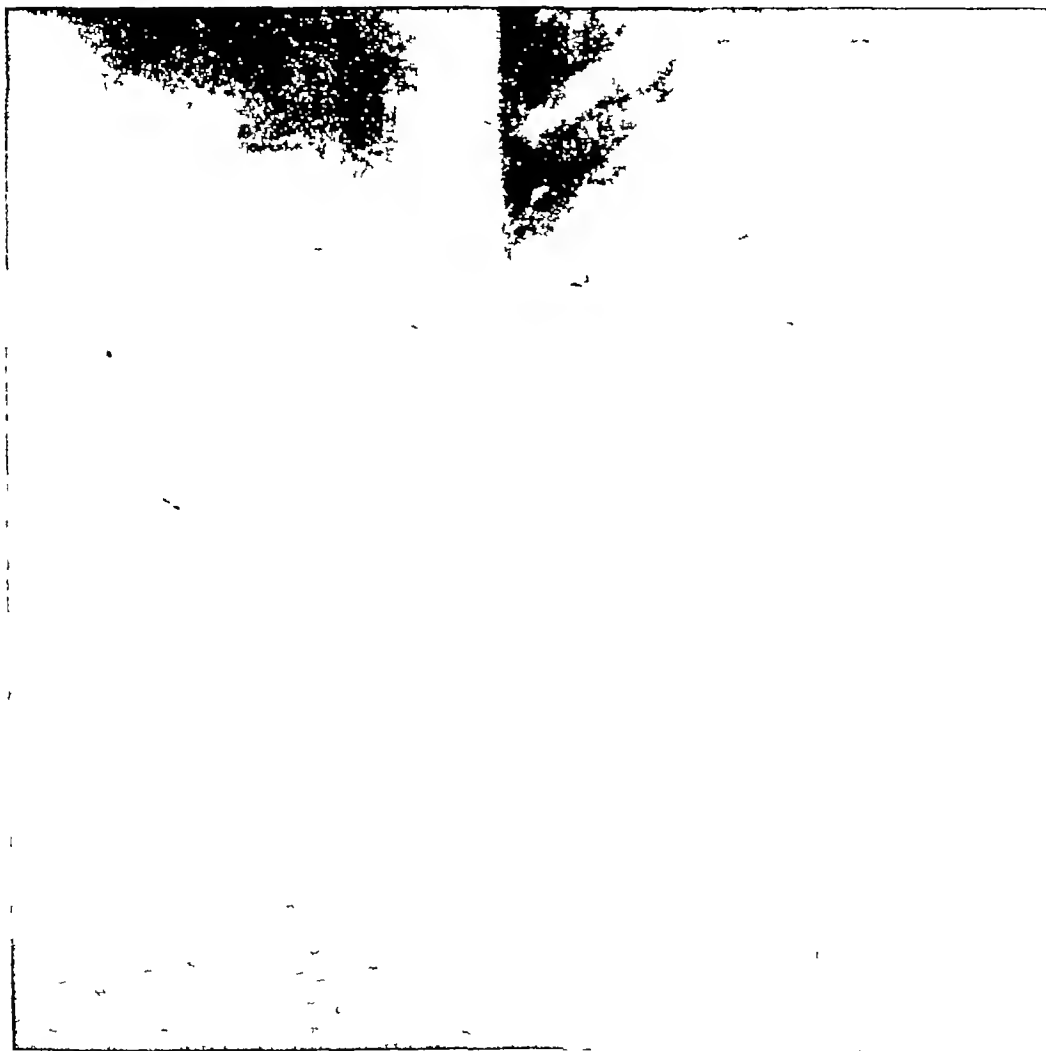


FIG 5 Authors case of fracture through base of odontoid with almost no displacement

13 Mixter and Osgood

after four months. Paralysis recurred in two months. Cleared again in one month. Then Mixter and Osgood operation and plaster for six months. Paralysis almost completely cured in one year. Observation for five weeks then manipulation with temporary relief of pain. After six months manipulated again and plaster applied. After one month

14 Osgood and Lund

two months. Immediate relief of pain and gradual improvement in function of neck. Rest in bed with cardboard Thomas collar for two weeks during which time dysphagia cleared and pain improved. Leather cuirass for three months. Leather Thomas collar for three months more. After two months baking massage and guarded exercises.

15 Wüsthoff

Complete normal function of neck without pain in six months
 Casual for five months, during which time the paralysis began and progressed. Then traction in bed for one week, followed by plaster for three months. Massage of ex

relieved by rest. Five years later fell again. Two months rest, recovered. Seven years later fell on ice and had definite quadriplegia, worse on right. Calot jacket improved him, but he would not stand it. Plaster with jury mast then put on but he lost

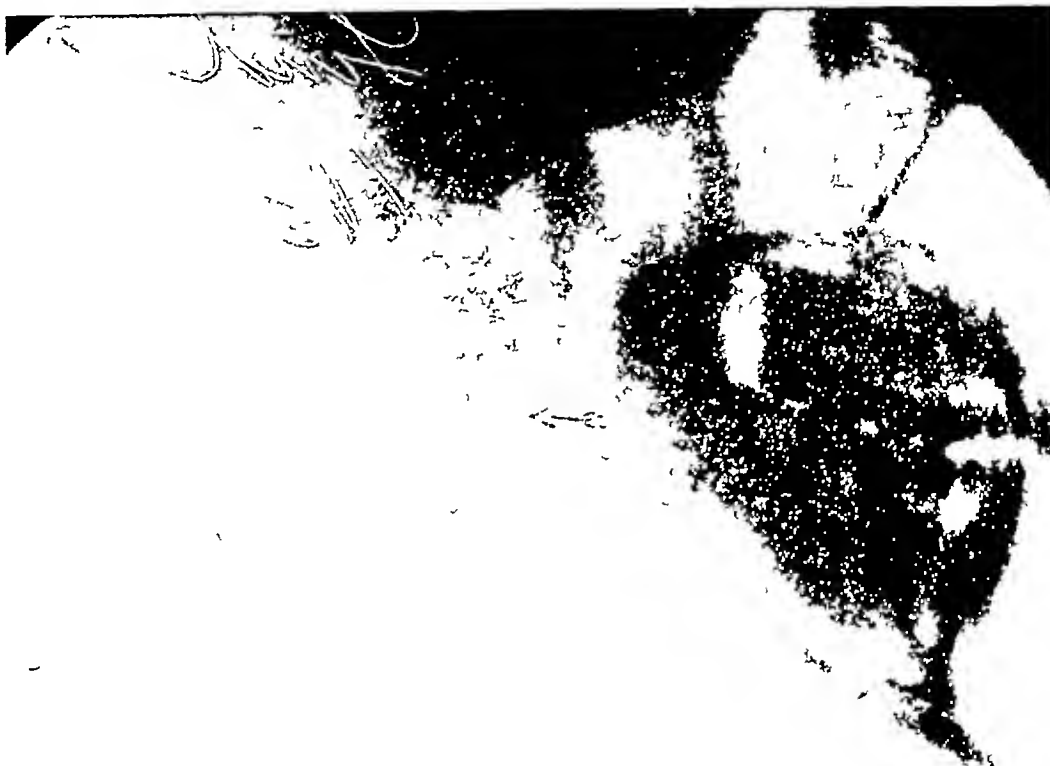


FIG 6 Authors case 9 months later with firm union and return of full function

16 Elliott and Sachs

tremities. Fair recovery from paralysis but no rotation of head.
 Rest at first, recovered and worked including five years army service. Fell again twenty years later but had few symptoms for five months, when paralysis came on without immediate injury. This was

ground. Six months later was walking with the help of an orderly who slipped and the patient's neck was strained. Immediate almost total quadriplegia. Died one month later. Autopsy showed false joint at site of fractured odontoid.

Case No	Author	F Result	
		Time Followed	Condition at that Time
1	Ruszyński	5 months	Partial paralysis but able to walk No pain in neck
2	Naegeli	1 year	Partial paralysis but able to walk
3	Forbes	1 year	Complete cure
4	Blaine	16 months	Died of paralysis Autopsy
5	Le Breton	6 months	Slight stiffness No pain
6	Nicholson	10 weeks	Stiffness and pain
7	Frisch	1½ years	Slight pain no stiffness
8	Frisch	2 weeks	Pain and stiffness
9	Edwards	1 year	Complete cure
10	Osnato	1½ years	Partial paralysis but able to walk No pain
11	Elv	1 year	Head turns only to left No pain
12	Elv	14 months	Very slight paralysis but able to do stenography
13	Mixter and Osgood	21 years	Normal after one year Continues to date
14	Osgood and Lund	22 months	Normal after six months Continues to date
15	Wüsthoff	10 months	Partial paralysis stiff neck
16	Elliott and Sachs	32 years	Died as result of paralysis

BIBLIOGRAPHY

(Complete bibliography of early articles may be found in Seward and Rogers²³ and in Frisch¹¹)

- 1 Blaine E S Manipulative (Chiropractic) Dislocation of the Atlas Jour A M A 1915 Vol 45 pp 1536-1538
- 2 Boeckel J and Boeckel A Des fractures du rachis cervical sans symptômes médullaires Rev de Chirurgie 1911 Vol 44 pp 48-58 and 255-261
- 3 Edwards J G Fracture Dislocation of Cervical Spine in a Child Med Jour of Australia 1970 Vol 1 p 3111
- 4 Elliott G R and Sachs E Observations on Fracture of Odontoid Process of the Axis with Intermittent Pressure Paralysis Annals of Surgery 1911 Vol 50 pp 576-580
- 5 Elv L W Subluxation of the Atlas Annals of Surgery 1911 Vol 54 pp 20-29
- 6 Forbes R D Dislocation and Fracture of the Atlas Northwest Medicine 1921 Vol 20 pp 274-276
- 7 Frisch E Über die Fracturen des Zahnfortsatzes des Epistropheus Deut Zeit f Chir 1912 13 Vol 120 pp 7-34
- 8 Frisch E Nachtrag zu meiner Arbeit über die Fracturen des Zahnfortsatzes des Epistropheus Deut Zeit f Chir 1912 13 Vol 120 pp 182-185
- 9 George A W A Method for More Accurate Study of the Atlas and Axis Boston Med and Surg Jour 1919 Vol 181 pp 395-398
- 10 Hartwell J B An Analysis of 133 Fractures of the Spine Treated at the Massachusetts General Hospital Boston Med. and Surg Jour 1917 Vol 177 pp 31-41
- 11 Jefferson G Fracture of the Atlas Vertebra Brit Jour of Surg 1919 20 Vol 7 pp 40-44
- 12 Le Breton P A Case of Fracture of the Odontoid Process of the Axis Amer Jour of Orth Surg 1916 Vol 14 pp 549-551
- 13 Mixter S J and Osgood R B Traumatic Lesions of the Atlas and Axis Annals of Surgery 1910 Vol 51 pp 192-207
- 14 Naegeli Th Atlas Luxation nach vorn mit Fraktur des Zahnfortsatzes des Epistropheus Deut Zeit f Chir 1919 Vol 148 pp 269-275
- 15 Nicholson G Fracture of Odontoid Process and Partial Dislocation of Atlas without Compression of the Cord. Brit Med Jour 1924 Vol 1 p 465
- 16 Osnato M Non Operative Treatment of Fracture of Cervical Vertebra with Cord Injury Jour A M A 1921 Vol 76 pp 1727-1730

17 Ruszyński F Beitrag zur Therapie der Luxationen und Luxationsfrakturen im unteren Kopfgelenk Deut Zeit f Chir 1926 Vol 193 pp 76-81

18 Seward J A and Roger H Anesthesia of the Suboccipital Nerve as a Sign of Fracture of the Posterior Arch of the Atlas Paris Medical 1917 Vol 7 pp 540-541

19 Wüsthoff R Über die Luxationsfraktur im unteren Kopfgelenk Deut Zeit f Chir 1923 Vol 183 pp 73-95

DISCUSSION

DR W J MIXTER, Boston I feel that this is an important subject even though it is a rare condition, largely on account of the possibility of very severe late results Sneezing or coughing weeks later, may cause complete paralysis or death It has been very strongly brought home to me on account of a recent case how difficult it is to control these patients This was a young lad who was injured two and a half years ago, playing tug-of-war with a belt around the back of his head He had a sharp pain in the back of his neck and stopped playing, and in the evening I was called to see him At that time he had marked rigidity of the neck and absence of all rotation These were the only abnormal findings X-ray showed separation of the odontoid He never showed any neurological symptoms at all aside from the stiffness in his neck He had one curious finding—he had a temperature of 105 the next morning, which stayed up for two days He was kept in traction for three or four months, and then given a high collar with a strap around the forehead This little fellow is playing football today and I cannot prevent his father from letting him play football I am expecting to hear any time that the boy has been killed

I think Dr Osgood has worked out a better scheme of immobilization than we used I think the curass is better than prolonged traction

DR J B WOODMAN, Franklin, N H During the war I saw two men who I think would come under the category of injury of the odontoid or odontoid and atlas One had been standing on the rear of a truck and was thrown backward, striking on the back of his head the other had had a tonsillectomy and was dragged back on a straight table and his head was allowed to fall back The roentgenograms showed a slipping around of the atlas and one-sided dislocation so that the men held their heads stiff and to one side, and muscle spasm was present These cases were months old, and it was hard to get satisfactory xrays, but we could feel the prominence in the back of the pharynx We didn't try to straighten these cases out

Thirteen years ago I was called to see a man who was thrown from his team and was dragged, his head bumping along the ground. Aside from having a loosening of the retina so that he lost the sight of one eye, he sustained injuries of the neck which Dr Osgood thinks doubtful if a fracture of the odontoid. There is a backward tipping of the atlas on the axis, so the man has to carry his chin protruding. He also has



FIG 7 Lateral view of immobilizing leather and steel cuirass with head strap. Authors case.

a fusing together of the third and fourth cervical vertebrae from a compression fracture. His symptoms were terrific pain in the back of the neck and in the arms, and when I saw him ten minutes after the injury he was sitting on a chair and holding his head up with both hands. We took hold of his head and lifted up, which gave him great relief, and then we built him up a plaster of paris cuirass and we molded those about his head, neck, shoulders, and chest. He was put to bed in this and developed hypostatic pneumonia from which he recovered. We kept him in this cuirass for four months and then in a Thomas collar. He returned to work after six months and worked for twelve years.

DR ROBERT B OSGOOD Boston I call your

attention to the fact that Dr Mixer reported one, and Dr Woodman two cases of fracture of the odontoid. It is perhaps a more common injury than is the general impression. You will find it stated in the old literature that fractured odontoids never unite. We seem to have proved to you that they may unite. They are supposed to be usually fatal, but union may take place and there is operative relief in certain cases where there is non-union. Perhaps this warrants our bringing the subject to your attention. The end results are not all bad if the patients can be promptly and appropriately treated. We ought to be able to recognize them with the help of roentgenograms.

DR EDMUND H STEVENS, Cambridge I would like to report two cases that were brought



FIG 8 Back view of immobilizing leather and steel cuirass. Authors case.

to the Cambridge Hospital many years ago. Two men were thrown backwards from the back seat of a wagon. When they were brought into the hospital they were breathing with difficulty and died soon after. Both were paralyzed from the shoulders down. At the autopsy it was found that the odontoid process was broken almost exactly alike in both cases.

ORIGINAL ARTICLES

DIPHTHERIA DEATHS IN MASSACHUSETTS, 1926*

Second Chronological Report¹

BY EDWARD A. LANE, MD AND FILIP C. FORSBECK, MD

IN 1919 Carey¹ reported a study of 1 000 diphtheria deaths occurring in Massachusetts. At that time the general trend was for the incidence to remain constant from year to year while the fatality rate was slowly dropping, presumably due to the increased use of antitoxin. Since this report the picture has changed. The fatality rate is no longer dropping but there has been a spectacular drop during the last few years in the incidence of the disease. While there has been a general decrease in the prevalence of diphtheria in non-immunizing as well as immunizing communities in all probability the extensive use of toxin-antitoxin has played a part in the declining incidence of the disease.

In the years 1920-1926, inclusive there occurred a gradual change in the age distribution of cases. The relative incidence diminished in the age group 6-14, while there was a relative increase in both the group 0-5 and the group above 14 as shown in the following table.

DIPHTHERIA CASES, 1920-26 CLASSIFIED BY AGE GROUPS

	0-5		6-14		15 plus		Total Age
Year	C	%	C	%	C	%	Given %
1920	2 612	33.8	2 959	44.1	1 153	17.1	6 724 100
1921	3 259	39.1	3 841	46.0	1 244	14.9	8 344 100
1922	3 414	41.5	3 623	44.1	1 169	14.4	8 206 100
1923	3 440	40.5	3 917	46.0	1 158	13.5	8 515 100
1924	2 859	43.5	2 690	40.8	1 040	15.7	6 589 100
1925	1 776	43.5	1 629	40.0	670	16.5	4 075 100
1926	1 376	44.8	1 144	37.3	550	17.9	3 070 100

This is one of the factors which point to the probable influence of active immunization on the incidence of the disease. Since the school group is principally the one between 7 and 14, and the one in which by far the greater part of active immunization has been done, this change in age distribution is just what one would expect if immunization were actually influencing the morbidity.

This paper is an analysis of 146 unselected deaths from diphtheria occurring in Massachusetts, exclusive of Boston, in 1926. The total diphtheria deaths reported for that year were 249, of which 58 occurred in Boston.

AGE AND SEX DISTRIBUTION

				Percentage Distribution	Total
Age	Male	Female	Total	146 deaths studied	deaths for year
Under 1	3	1	4	2.8	4.8
1	9	9	18	12.4	13.7

Age	Male	Female	Total	Percentage Distribution	
				146 deaths studied	Total deaths for year
2	12	6	18	12.4	11.2
3	13	9	22	15.2	13.7
4	11	8	19	13.1	12.9
5	7	12	19	13.1	{ — — 30.9* — —
6	7	6	13	9.0	
7	5	2	7	4.8	
8	3	4	7	4.8	
9	4	1	5	3.3	—
10-14	2	4	6	4.2	4.8
15-19	0	1	1	0.7	1.2
20-29	2	2	4	2.8	3.2
30-39	0	0	0	0	0
40-49	1	1	2	1.4	2.0
50-59	0	0	0	0	4
60-69	0	0	0	0	4
	79	66	145	100.0	100.0
Unknown			1		
			146		

Includes age group 5-9

ECONOMIC CONDITION OF FAMILY

	Number	Percentage Distribution
Good	16	12.5
Fair	25	19.5
Poor	87	68.0
	128	100.0
Not stated	18	
	146	

IMMUNITY

None of the 146 individuals had been actively immunized. Only one child had ever been given the Schick test. In this instance the test, which had been given 2 years previously, was said to have been negative.

SOURCE OF INFECTION

The probable source of infection was found in 28 instances, or 19.2 per cent of the total. This is an increase over analogous figures reported by Carey¹ which showed that the source of infection was known in 10.7 per cent of the cases. Thirteen cases were secondary to another case in the same family; 2 to cases in the home of relatives; 7 were said to have contracted the disease from neighborhood cases, while 3 had been in contact with cases in school. Two had been exposed to cases in a distant part of the city, and one had been exposed outside of the city.

MEDICAL ATTENTION

Eight, or 5.5 per cent of the total, had no physician during their illness. In 89 instances, both the date of onset to the date of first medical visit are known. The number of days from the date of onset to the date of first visit by a physician is as follows:

PERCENTAGE DISTRIBUTION OF CASES BY DATE ON WHICH PHYSICIAN FIRST SAW THE CASE, GROUPED ACCORDING TO ECONOMIC STATUS

Days	Good (14 cases)	Fair (18 cases)	Poor (60 cases)	Total (92 cases)
Day of onset	29.0	22.0	8.0	14.0
2	21.5	22.0	8.0	13.0
3	7.0	17.0	15.0	14.0
4	0	17.0	15.0	13.0
5	7.0	5.5	23.0	21.0
6	21.5	11.0	7.0	10.0
7	7.0	0	7.0	6.0
8	7.0	5.5	3.0	4.0
9	0	0	3.0	2.0
10	0	0	2.0	1.0
11	0	0	2.0	1.0
12	0	0	0	0
13	0	0	0	0
14	0	0	2.0	1.0
	100.0	100.0	100.0	100.0

The interval between onset and medical attention varied considerably with economic status. Among the families classed as of "good" economic status, the doctor saw the case on the day of onset or the following day in 51 per cent of the cases, among those classed as "fair" in 44 per cent, while among those classed as "poor" only 16 per cent had a physician to see the case during the first two days of illness.

On the basis of the distribution of cases by day of disease on which a physician first saw the case, the median in the "good" economic group lies at the end of the second day. In the "fair" group, the median is 2-1-3 days or one-third of a day later than in the group first mentioned. In the "poor" group, the median falls in the early part of the fifth day of the disease (4 2/17 days).

Medical consultation was had in 29 instances.

The foregoing figures indicate very strikingly one of the chief reasons for the continued mortality from this disease. While the too general delay in calling a physician for all manner of illness is well known and regrettable, it is, of course, especially disastrous in the case of diphtheria where each day's delay in the administration of antitoxin may mean a preventable death. The fact that 68 per cent of the deaths were classed as among the "poor" further indicates the probable complicating factors of economic condition and ignorance.

Unfortunately, data are not available for determining the interval between the date of first visit or of diagnosis by the physician and the date of administering antitoxin. It is felt, however, that some physicians are too prone to wait for the laboratory report before giving anti-

toxin, thus losing from one to two days or more of absolutely vital importance to the patient's life. For this reason, the card enclosed with the state diphtheria culture outfit reads, "Do not wait for laboratory report before using anti-toxin." The fact that 42 patients were given from two to five doses of antitoxin suggests a failure on the part of some physicians to appreciate the great importance of giving a sufficient amount of antitoxin in one dose. It is far better to give more than might have been necessary than to run the risk of giving too little, or of planning to give the full amount in divided doses.

CLINICAL DIAGNOSIS

In only 7 cases, or 5.1 per cent of the total, did the physician fail to make a diagnosis of diphtheria. This is an apparent improvement over 1919, when Carey¹ reported that 7.6 per cent of the deaths were not diagnosed as diphtheria. However, the number of deaths studied is not large enough to make the difference statistically significant. Of the mistaken diagnoses, 1 was given as laryngitis, 1 as pneumonia, 3 as tonsillitis, 1 as Little's disease, and 1 as laryngeal stenosis.

In one instance diphtheria was complicated by scarlet fever, in another by measles, and in 3 instances by bronchopneumonia.

LABORATORY DIAGNOSIS

In the 118 cases for which this information is available, 77 had had laboratory examinations. Of these, 57 were reported positive and 20 negative. In a few of the latter instances repeated negatives were obtained. In those cases not so examined occasional comments were, "obvious diagnosis," "not time."

TYPES OF CASES

In 82 per cent of the cases in which a physician was called, the type of diphtheria was not stated. The percentage distribution of the remainder by types is given in the following table:

Type	Number	Per Cent
Pharyngeal	68	50.8
Laryngeal	44	32.8
Nasal	1	7
Pharyngo-Laryngeal	8	6.0
Pharyngo-Nasal	8	6.0
Laryngo-Nasal	2	1.5
Pharyngo-Laryngo-Nasal	3	2.2
	134	100.0
Not stated	12	
Total cases studied	146	

Roughly then, about one-half the cases were of the pharyngeal type, about one-third were laryngeal, and less than 1 per cent were nasal. The rest were combinations of these types.

COMPLICATIONS

In 92 cases, or 63 per cent of the total, there were no complications or none given

Sixty-one complications were listed for the other 54 cases

Type	Number	Per cent
Cardiac Involvement	23	41
Intubation	11	18
Toxemia, Septic	8	13
Pneumonia	7	11
Kidney Involvement	5	8
Mumps	2	3
Measles	2	3
Diphtheritic paralysis	1	2
"Hypertrophied cervical glands	1	2
Nasal hemorrhage	1	2
	61	100

Involvement of the heart constitutes the outstanding fatal complication with intubation, toxemia and pneumonia next in order

HOSPITALIZATION

Of the 119 deaths for which this information is available, 73 of the patients or 62.2 per cent, were hospitalized. One case developed after entrance to the hospital. In 42 instances, information is available as to the interval between onset and hospitalization

	Number	Per Cent
Day of onset	2	4.7
1 day after onset	6	14.3
2 days	9	21.4
3	6	14.3
4	8	19.0
5	4	9.5
6	2	4.7
7	3	7.1
8	1	2.5
9	1	2.5
	42	100.0

ANTITOXIN

No information is given in 11 cases. In 13 antitoxin was not given for the following reasons

Refused by physician	1
Physician out of town	1
Illness too short	4
Physician not called	7
	13

Seventy-two individuals received one dose of antitoxin. But two were given less than 5,000 units. In these two instances, in each of which the dose was 1,000 U, the serum was administered in one case on the sixth day, while in the other the date of administration is unknown. The largest dose used (140,000 U) was given to one patient on the sixth day and to another on the seventh day. In general, the later in the course of the disease the antitoxin was given, the larger the dose.

In the remaining 19 instances in which single doses were given, the interval after the onset is unknown.

Antitoxin Given	Number	Average Dose
Date of onset	1	10,000
1 day after onset	6	17,500
2 days	4	41,500
3	11	46,591
4	13	44,923
5	6	46,666
6	6	47,166
7	4	68,750
13	1	15,000
15	1	10,000
	53	

The average single dose for the combined 72 cases was 40,580 U, while the most frequent dose was 20,000 U.

Forty-two patients received from 2 to 5 doses of antitoxin. In most cases these doses were given at daily intervals with equal or progressively larger doses indicating that the physician had planned to give the antitoxin in divided doses. In 8 other instances antitoxin was given but the amount is not stated.

SUMMARY

1. None of the 146 individuals had been actively immunized against diphtheria.
2. Most of the deaths occurred among the poor.
3. One child died of diphtheria who was said to have had a negative Schick test two years previously.
4. About half of the cases were of the pharyngeal type.
5. Cardiac complications occurred in about one-third of the cases.
6. About two-thirds of the cases were hospitalized.
7. The average dose of antitoxin was about 40,000 U.

ACKNOWLEDGMENTS

We are deeply indebted to the following District Health Officers who painstakingly gathered the material from which this paper has been written:

Oscar A. Dudley, M.D.
Leland M. French, M.D.
Lyman A. Jones, M.D.
Richard P. MacKnight, M.D.
Harold E. Miner, M.D.
George T. O'Donnell, M.D.

Thanks for their coöperation are also due the local health officials in the following cities and towns where investigations covered by this study were made: Acushnet, Beverly, Chelsea, Chicopee, Danvers, Fall River, Fitchburg, Great Barrington, Haverhill, Holden, Holyoke, Ipswich, Lawrence, Leominster, Lowell, Lynn, Malden, Marblehead, Medford, Melrose, Methuen, New Bedford, Northampton, Oxford, Pittsfield, Salem, Somerville, Spencer, Springfield, Wakefield, Waltham, Warren, Watertown, Winchester, Woburn and Worcester.

REFERENCE

1. Carey, Bernard W. Lessons from a Study of One Thousand Diphtheria Deaths. B. M. and S. J. CLXXX 67-70 Jan. 16 1919.

THE RETICULO-ENDOTHELIAL SYSTEM—A GENERAL REVIEW*

BY C. P. RHOADS, M.D.

IN view of recent editorial comment it is felt that a widespread misunderstanding exists in regard to the reticulo-endothelial system. This term has engaged the attention of anatomists, pathologists and clinicians for fifteen years. It has been the basis for papers from scores of laboratories. The interest of such a large number of workers, many with conflicting opinions concerning relatively minor details, has perhaps confused the issue for the ordinary reader. He finds the literature so filled with new terms and complicated theories that he tends to consider the whole matter a purely academic one and quite out of his depth. Fundamentally, the subject is very simple if a certain few basic facts are understood. The subject is so important and applies to so many branches of medicine that every physician interested in scientific work should understand the principles involved.

For these reasons the author has attempted to give a concise, definite outline of the subject. Controversial points are avoided as far as possible. The object of such a review is to clarify what is now a bewildering situation for many readers who have neither the time nor the inclination to work it out alone.

The first step toward the recognition of the reticulo-endothelial system was made by Ranvier in 1891. He described the powers of phagocytosis exhibited by certain free connective tissue cells.

Metchnikoff recognized this group of cells and found that the large cells of the splenic pulp and lymph nodes, certain endothelial cells, like the so-called Kupffer cells of the liver, and some of the large mononuclear cells of the blood stream were also able to phagocytize actively. He felt that they probably had much to do with the production of immune bodies and were actively concerned in resistance to disease.

Ribbert in 1904 conceived the idea of introducing harmless dyes into the blood stream of a living animal. To his surprise he found that all of the body cells were not equally stained. On the contrary, a certain set of cells took up the dye and the remaining cells were stained little or not at all. He repeated this work using colloidal suspensions of various materials, such as sugar of iron. It was found that the particles were picked up by the same cells which in the previous experiments had taken up the dye. These cells were those previously described by Metchnikoff as concerned with phagocytosis of bacteria.

Other observers, particularly Bouffard and Goldman, repeated the experiments using different dyes and observed the same group of

phagocytic cells almost specifically stained. Maichand described these cells and supposed them to arise from the adventitia of the local blood vessels. This is of interest because it is the conclusion reached by two of the most recent workers on the subject, Lang and Sugiyama.

In 1913 Aschoff and Kiyono collected all the observations made up to that time and added the results of a number of experiments of their own. They were the first to put forward the conception that these cells were related anatomically and physiologically. These authors felt that since this group of cells had the same function wherever found, which function had a distinct place in the body metabolism, they should be considered as a distinct organ or system. The criterion mainly considered in including cells in this system is the "intensity and frequency of phagocytosis" (Aschoff).

To designate this group of cells the term "reticulo-endothelial system" was chosen. As then understood, that title best expressed the origin of the cells included. The word reticulum literally meaning a network, has been for years applied to a set of large, pale staining cells found in lymphoid tissue and in bone marrow. These cells were supposed to produce delicate fibrils which impregnated specifically by various methods based on the reduction of a silver oxide solution. Mallory and Parker have recently shown that these fibrils are not a unique substance but are simply fine fibrils of the common connective tissue intercellular substance, collagen. This indicates that the cells forming these fibrils are of the nature of connective tissue and the classification of the large phagocytic cells, commonly supposed to be the source of such fibrils, is thus thrown into question. The function of the cells described under the term of reticulum cells remains the same, whatever their relation to the ground structure, and they must be included with the other phagocytic cells of this system.

The reticulo-endothelial system is composed of four groups of cells, selected because of their similarity in function and morphology.

The first group includes the cells just discussed, commonly called reticulum cells. They are large, pale staining cells found in the splenic pulp, the cortical nodules and pulp cords of the lymph nodes and other parts of the lymphatic apparatus. Whether endothelial, connective tissue or independent in nature, these cells stain intensely by vital methods and take part in the functions of the system.

The second group includes the cells lining the sinuses of the lymph nodes, the blood sinuses of the spleen, the sinusoids of the liver lobules (Kupffer cells) and the capillaries of bone mar-

*From the Pathological Laboratory of the Boston City Hospital, Boston, Mass.

row adrenal cortex and hypophysis. By most workers these cells are considered endothelial in nature.

A third group of functionally similar cells is made up by the wandering phagocytic cell of connective tissue, originally described by Laverrier.

The fourth and last group includes the phagocytic mononuclear cells of the blood stream. Some would include under this heading all of the mononuclear blood cells and others only a small part of them. At all events a certain number of these cells must be included.

In 1924 and 1925 Sabin and his co-workers applied the "supravital" technique to the study of the mononuclear phagocytic cells of the blood and tissues. Solutions of dye, particularly neutral red and Janus green, were allowed to dry in a thin film on microscope slides. Tissues or body fluids, such as blood or exudates, were then placed on the slide and sealed under coverslips with vaseline to prevent drying. These preparations were examined under a microscope kept at body temperature. By this method the cells lived for a long time and their activities could be observed.

Working with this technique these investigators concluded that two types of phagocytic cells, monocytes and clasmatoocytes, could be distinguished by the way in which they took up the dye. These cells, they felt, have a different origin, the monocyte coming from a primitive reticular cell which also acts as the source of polymorphonuclear leucocytes and lymphocytes and the clasmatoocyte from endothelium. They described in the monocyte a collection of fine bodies called a rosette, staining with neutral red grouped about a clear centrosphere placed close to the nucleus and felt that the phagocytic powers of this cell were limited. They described the clasmatoocyte as a somewhat larger cell lacking in mitochondria and rosette formation. This latter type of cell is distinguished by its activity in phagocytosis and by the irregular distribution of the phagocytosed material in the cell cytoplasm. The monocyte is the predominant mononuclear cell of the blood stream according to this theory, and the clasmatoocyte the active phagocytic cell of the tissues.

To sum up. There exists in lymphoid tissue, liver, bone marrow, connective tissue and in the blood stream a group of cells having common morphology, perhaps a common, or closely related, origin and a common function. For the sake of simplicity we collect all these cells under one head and call them the reticulo-endothelial system because they have some anatomic relation to reticulum and to endothelium.

With this simple outline of the structure of the reticulo-endothelial system in mind, its function as an organ taking part in bodily processes can be more easily understood.

The most interesting function of this cell group has to do with its relation to immune

processes. It has been known for a long time that the removal of certain organs, such as the spleen, has a marked effect on the formation of immune bodies, such as hemolysins, precipitins and agglutinins. When workers noticed the phagocytic activity of the cells of the reticulo-endothelial system for material which causes the production of antibodies, their logical conclusion was that these cells produced the immune bodies. More weight was given this assumption by the fact that organs rich in cells of the reticulo-endothelial type were particularly good antibody producers. The ingenious scheme was devised of injecting various non-toxic particulate materials into the living animal. This material would be taken up by the phagocytic cells and stored in their cytoplasm. This storage would presumably interfere with their other function, such as antibody production. Bieling and Isaac, Gay and Clark and Stewart and Parker, as well as many others, tried this experiment under slightly different conditions and arrived at a surprisingly uniform result. They found that, although small injections might incite the cells to an increased production of antibodies, large injections almost constantly depressed such a formation. Gar and Morrison also showed that the production of a large number of cells of this type in a localized area, such as the pleura, greatly increased the resistance to local infection. This may well be the reason for the well-known difficulty of infecting a granulating surface.

Many hematologists feel that certain cells of the type included under this system are the source of the blood cells. For example, one group of workers, led by Sabin, feel that the red cells arise from the endothelium of the bone marrow and the white cells, including the polymorphonuclears, the mononuclears and the lymphocytes, come from a primitive reticular cell. The endothelial cell of the bone marrow is very phagocytic and is included in the reticulo-endothelial system.

These cells not only take part in the production of the blood cells but are active agents in their destruction. In diseases, such as typhoid fever, malaria and pernicious anemia, they are found packed with erythrocytes in various stages of disintegration. By the use of hemolytic agents this process can be particularly well observed.

As these cells break down erythrocytes, the question immediately arises whether they complete the change of the hemoglobin to bile pigment. That the liver is not required for the formation of the bile pigments has been conclusively shown by Whipple and his associates. Le Pehne, Eppinger and others by various techniques demonstrated that the cells of the reticulo-endothelial apparatus were the active agents in this process. As final proof Rich demonstrated the formation of urobilin from hemoglobin in pure cultures of these cells.

The function of the storage of iron pigment is related to these processes. In diseased conditions where there has been a marked breakdown of blood, for example, pernicious anemia, the reticulo-endothelial cells are found to be filled with large amounts of iron-containing pigment. Just what the function of the cells is in relation to this pigment is not entirely clear.

The cells of this system react with particular activity to certain specific infections. It is felt by many investigators that they make up the characteristic lesions of tuberculosis, typhoid fever, leprosy and rheumatic fever. In the reaction of the body to ordinary infections these cells can be seen actively phagocytosing bacteria and cellular debris. It is considered that they are particularly prominent in the body reactions to kala azar, trypanosomiasis, typhus fever, Oroya fever, Rocky Mountain spotted fever, trench fever and measles.

In certain infections the phagocytic activity of cells of this type becomes evident. They may be seen increased in size and number with their cytoplasm laden with phagocytosed material. The presence of such phagocytic cells in the blood stream is known as histiocytosis and has been reported in typhoid fever, endocarditis, typhus fever and smallpox. Certain workers hold that these cells represent the type cell in some leukemias.

Finally, the cells of this group probably form a certain group of rare tumors, variously termed reticulum cell sarcoma and endothelioma. The absolute proof of this participation in tumor formation is still wanting.

One other activity of the cells of this group is of general interest. In various clinical states characterized by a hypercholesterolemia, such as starvation or diabetes, they may become filled with lipid material. The local disposition of masses of these cells give rise to the yellowish skin tumors called xanthoma, so often seen in diabetes.

SUMMARY

The reticulo-endothelial system is an organization of cells grouped together because of a common function, that of phagocytosis. It is made up of cells of somewhat similar morphology and possibly a common origin found in lymphoid tissue, spleen, liver, bone marrow and connective tissue.

The function of this cell group is a very important one. It has to do with blood formation and destruction and with the formation of the bile pigments. It is active in combating infection, locally by phagocytosis and generally by the formation of antibodies. It reacts specifically to certain infections and takes part in processes of inflammation and repair. It has an ill-determined relation to disordered lipid metabolism. Finally, there is a possibility that it may form tumors.

ASSAILS STOP WATCH" EDUCATION

"Stop watch" methods in the promotion of educational efficiency in the schools are severely condemned as detrimental to the mental health of the child by Dr. Garry Cleveland Myers of Western Reserve University in the current number of *Mental Hygiene*, quarterly journal of the National Committee for Mental Hygiene. School psychologists with their multiplicity of mental tests, the curriculum expert who adds more and more new things to be learned by the child, textbook writers who build their books for pupils around the stop watch, teachers and supervisors, all come in for drastic criticism in Dr. Myers' discussion of the evils of over-emphasis on the time factor in school instruction. The 'efficiency movement,' says Dr. Myers, is gathering a momentum that seems to be almost irresistible. The psychiatrist is confronted by concrete evidences. Parents are beginning to express themselves. Within a few years they are going to register a very vigorous protest. But educational writers still are almost wholly on one side. They practically all are speed propagandists, and they are practically the only ones who can correct the difficulty.

"Researches in the learning field are beginning to appear which point to some of the educational experts' fallacies. Although he has been assuming that the way to get speed is to hold the stop watch on the child he never had available conclusive scientific evidence in support of this assumption. On the contrary, there are now available scientific data which pretty clearly demonstrate its falsity. In substantiation of his claim, Dr. Myers relates the results of a study he has recently made of the subject. It was found, he said, that learning, when accuracy was emphasized produced greater speed than when speed was emphasized. The reason that our children work so slowly is because we try to make them work so fast. If emphasis is put upon accuracy and the learner has a comfortable atmosphere in which to work, Dr. Myers states, 'speed is sure to follow. Then why all this human torture to the school child only to produce inferior learning products?'

Speed has come to be so highly valued above other considerations, he says, that today schools and teachers are rated largely on the speed with which their pupils can perform on certain standard tests. Obviously some of the results of this procedure (of mental measurements and achievement standards) have been good. But in the effort to bring the pupil up to the required standard, certain pernicious practices have developed. School experts and teachers have come to assume that the way to get speed in the performance of school work is to force the child to hurry. So the stop watch has been seized upon as the magic instrument. School supervisors and test experts have trained teachers in the devising of innumerable home-made tests which nearly always are speed measures. There are but few arithmetics, for example, among those that have appeared in the past five or ten years that do not have time exercises on almost every page. The child recites by the stop watch and he studies by the stop watch. But he doesn't hold the watch. Something certainly happens to the nervous system of a good many children under such conditions which does not promote their physical and mental health.

'The teacher harassed by numerous reminders of the importance of speed becomes nervous and oversensitive about the passing of each moment while the child is trying to recite orally. She gives most approval, as a rule, to the child when he answers quickly. She betrays annoyance when he pauses. If he breathes twice before he makes reply, he may read in her movements and facial ges-

(Continued on page 91)

A NEW TRACTION FINGER SPLINT*

BY REUBEN B. DAVIDOFF, M.D.

THE treatment of fractures of the phalanges of the fingers offers certain difficulties. The customary throat stick splint, and splints of a similar nature, while giving satisfactory immobilization, do not permit of the use of traction, often a much desired factor. On the other hand, while traction can be obtained by the use of a banjo splint, this apparatus is extremely cumbersome. To obviate these difficulties the writer has constructed a splint employing

it exerts traction in an efficient manner. The traction is under constant control, and by instructing the patient at the time of the application of the splint as to the amount of traction desired, he can thereafter maintain that degree of tension by means of the turnbuckle adjustment, thereby compensating for any slip or stretch of the adhesive traction straps.

The splint is made of iron wire, easily bent to shape with the aid of a pair of pliers. The



FIGURE 1

principle of the Thomas traction splint, the description of which is the purpose of this article. A search through the readily available literature has failed to disclose any similar use of such an apparatus.

Its employment has proven satisfactory in a limited number of cases. It has certain obvious advantages in so much as it is readily constructed, it is not cumbersome, it is easily and quickly applied and most important, of course

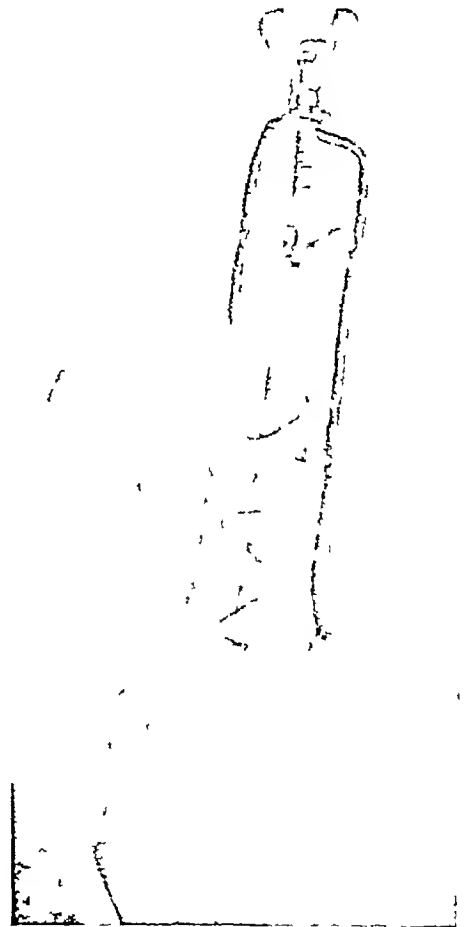


FIGURE 2

base ring is covered with a piece of rubber tubing. The windlass arrangement can be obtained at any hardware shop at a negligible cost. Traction can be exerted either through the use of the regular type of adhesive traction straps, or by boring the finger nail and exerting traction directly through the nail, as has been suggested

in a recent article¹ Correction of any lateral deviation can be readily corrected by means of appropriate pressure pads

The illustrations are self-explanatory In applying the splint to the thumb and mid fingers, the side bars of the apparatus are at the lateral sides of the fingers, while on the other fingers they are anterior and posterior This is due to the tilt of the base ring so as to make the same splint applicable to all fingers By enlarging and tilting the base ring, the splint



FIGURE 3

can be used in fractures of the metacarpal of the thumb, especially those close to the carpal-metacarpal articulation, which are so difficult to treat without traction

A leather finger cot may be drawn over the entire apparatus to make it less conspicuous

At the present time, no attempt has been made to standardize sizes, so it is necessary to construct each splint to meet the requirements of each individual case, but it seems probable that three graduated sizes of the apparatus should be sufficient to cover all cases

REFERENCE

- 1 Mock and Ellis Treatment of Fractures of the Fingers Surg Gyn and Obst Oct 1927 11 551

UNITED STATES PUBLIC HEALTH SERVICE

STUDIES IN CONTROL OF VENEREAL DISEASES

Surgeon General H S Cumming of the Public Health Service in a report submitted to Congress under recent date, has emphasized the wide prevalence of the venereal diseases as shown by recent studies conducted by the Public Health Service Reports have been collected in a large number of cities from every physician, hospital and other institution showing the number of cases of syphilis and of gonorrhea actually under treatment on a given date In the cities of 25,000 and more it is found that from one to two per cent. (average 1.5%) of the population is constantly under treatment on account of gonorrhea or syphilis

This is the first time that information has been available concerning the prevalence of the venereal diseases among the general population The Surgeon General emphasizes the fact also that there are undoubtedly many cases, particularly of gonorrhea and of latent syphilis which are not under treatment so that the actual total of cases in these communities would be somewhat greater than the 1.5% shown in these studies by the Public Health Service

Over a period of many years about 20% of all patients treated by the Public Health Service in its Marine Hospitals have been ill as a result of the venereal diseases In 1926 this percentage was slightly lower, namely 17% The Public Health Service collects reports of all communicable diseases from all State boards of health in the country In the calendar year 1925 the number of cases of syphilis reported exceeded that of any other reportable disease ranking ahead of measles Gonorrhea stood fifth with a total of 166,208 cases

In his report the Surgeon General called attention to the importance of scientific studies which the Public Health Service is conducting in an effort to develop more effective measures of prevention and treatment of the venereal diseases Because of the exceptional facilities offered in hospitals of the Public Health Service important investigations have been undertaken at the Marine Hospital at Stapleton Staten Island, New York and a number of other studies have been initiated in cooperation with leading scientific institutions such as the University of Pennsylvania and the Johns Hopkins University

Reports of venereal disease control efforts by State health departments show a great variation between the several states in the efficiency of this work During the last fiscal year 196,000 cases of syphilis and 160,000 cases of gonorrhea were reported Nearly 800,000 doses of the arsphenamine for the treatment of syphilis were distributed by the States The number of Wassermann tests shows an increase of 25% over the previous year Venereal disease clinics under the control of the State health departments during the past nine years have given more than 16,000,000 treatments to more than 1,000,000 patients

The Public Health Service report emphasizes the fact that facilities for treatment of indigent patients with the venereal diseases are most inadequate in the small towns and rural districts

NEW HAMPSHIRE MEDICAL SOCIETY

UTERINE MALPOSITIONS*

BY G. E. S. FOSTER, M.D.

UTERINE malpositions probably cause pain, discomfort and other ills that are often the only other single factor in the lives of women from the establishment of menstruation to old age. If the physician is better educated to the possibility of such conditions existing among women should be lessened. Be that as it may along with these advances come the better methods for making a more detailed and correct diagnosis. The physician is better educated to the possibility of such

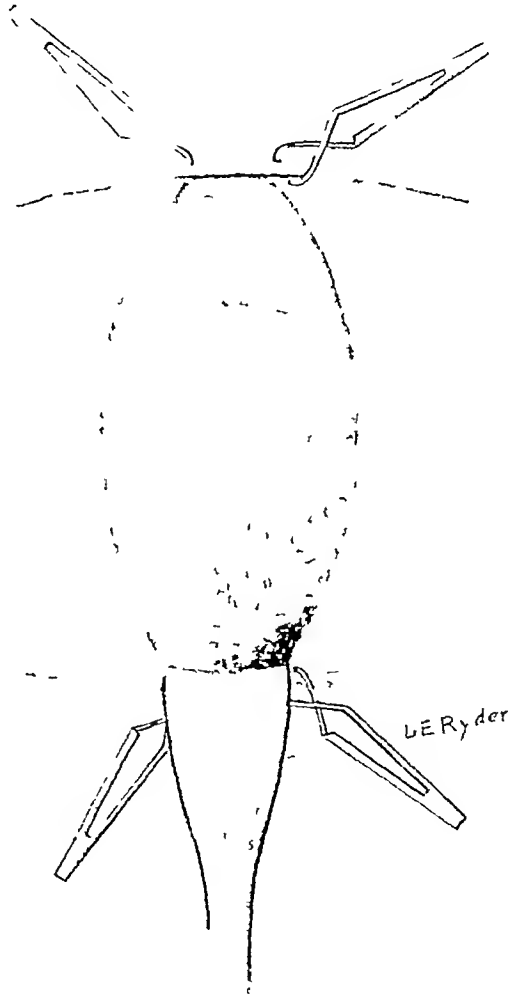


FIGURE 1. The pelvic cavity exposed by a median incision and the uterus brought up into the field of operation preparatory to being grasped with a thin four prong tenaculum, as shown in Figure 2.

this a uterus out of line will have marked influences upon the temperament, comfort and health.

A uterus out of line is probably no more prevalent today than it was a century ago. In fact with modern improved hygienic living and organized health giving games and other organized physical culture teachings such local

uterine displacements and seeks advice much earlier. For this reason we surely would expect to discover more of these uterine troubles.

During the past three decades the masses have learned that early relief is possible. Hospitalization has become a factor in the case of all physical ills and for this reason we are better able to correlate these cases. Present-day conditions and the advance in history taking and

*Read at the Annual Meeting at New Castle June 1927

fling of complete records afford us, as a profession, a much better opportunity to study these cases

Once the diagnosis is made, the method of treating must be selected and if permanent, full relief is to be had in the greater majority of instances, surgical interference is the chosen path

upon her household duties suddenly finds that the daily routine becomes a drudgery. She has to go to bed in the middle of the day unable to continue her work because of a weak back, severe headache or a pronounced dysmenorrhea secondary to a uterus out of line

Still further on in the life of women we come across the one who was vigorous and well previ-

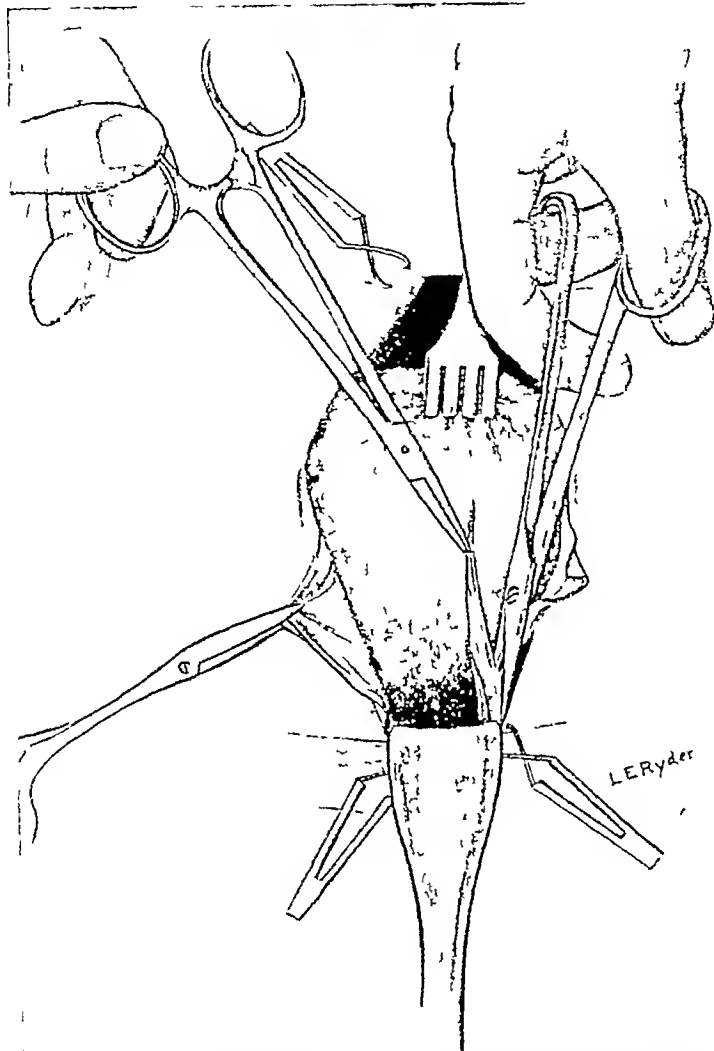


FIGURE 2 The uterus being held in position with a four pronged tenaculum in the hands of an assistant the peritoneum is grasped with peritoneal forceps at a point at each side of the abdominal wound about one and one half inches above its lower angle. Holding the peritoneal clips in his left hand the operator then cuts the peritoneum holding the free end with another pair of operating forceps from the grasping point outwardly and downward for a distance of about one and one-half inches the base measuring about one inch. The opposite side is treated in a like manner

How many times we have known young women attending school with ambition to go ahead and through higher education to make something of themselves, who would suddenly become apathetic and slip in their work because of a persistent backache, occipital headache, dysmenorrhea, extreme nervousness due to spinal plexus pressure, all secondary to a uterus out of line

Again the young married woman entering

ous to her first delivery. Since this she has lost weight, has become weak and from a persistent dragging down feeling or back pressure has become an entirely different woman. Here also must be considered the displaced uterus. To make a correct diagnosis, correct the condition and return these individuals to a self supporting status is a duty staring us squarely in the face. On the other hand if by some well selected method we can return these suffering

girls and women to normal health this surely is our duty as an organized profession

Another type of woman we all meet is the married one who desires a family but for some reason cannot become pregnant or if she does, unfortunately miscarries in the third or fourth month. Both of these existing conditions are too often due to a uterine malalignment of years standing or more recently for one reason or another.

Just a passing review of a normal position with its contents will surely augm-

in all directions, the principal support of course coming from the broad and round ligaments. Aside from the round ligaments which are most muscular and fibrous the remaining ones are layers and folds of peritoneum and vary much in their ability to serve the purpose for which they were intended. However under normal conditions the uterus should be held in the central plane previously mentioned as a line drawn from the tip of the coccyx to the umbilicus, and supported so that the tip of the cervix is on a level with the superior point of the symph-

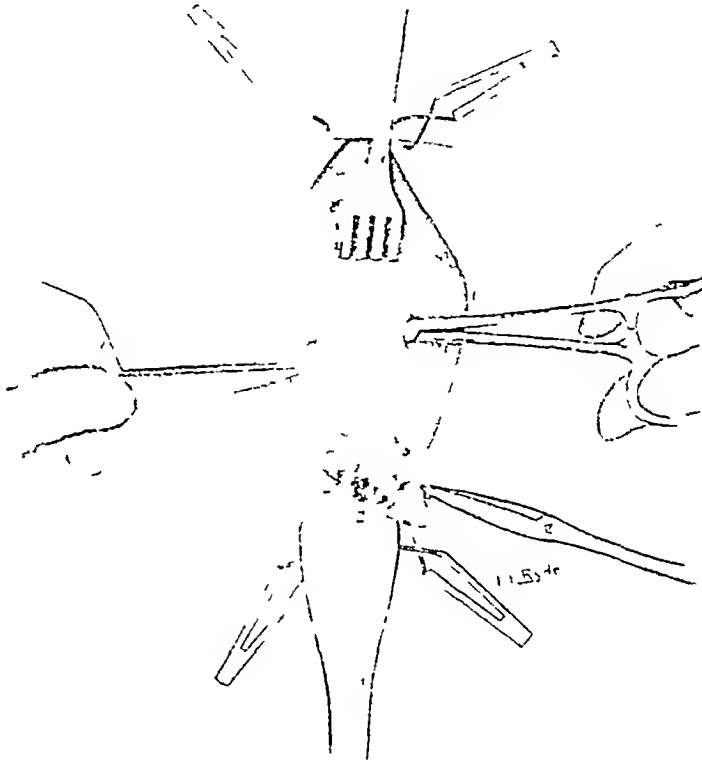


FIGURE 3 The fundus uteri is then pierced with a picked curved forceps at a depth of a quarter of an inch away on the opposite side. The piercing forceps then releases the forceps grasping the peritoneal band and draws it back through the opening just made. A similar procedure but through the first opening is next made on the opposite side.

emphasis of what a maladjusted uterus means. A normal, fully developed uterus is pear shaped, some three inches long two inches wide and an inch thick, weighing from an ounce to an ounce and a half. This body and the fundus and the cervix are movable, the first being the most free.

The central plan of a normally situated uterus conforms to a line drawn from the tip of the coccyx or near it to the umbilicus. Of course, within normal limits, there is some variation of this but this line serves as the average line.

The uterus is held in position by ligaments, two broad ones, two round ones and also the uterovesical and the uterosacral. These ligaments exert their influence from all sides and

sis-pubes and in a frontal plane passing through the ischiatic spines.

Even under normal condition these lines and planes can vary for an over-loaded bladder may push the fundus and body posteriorly or an over-loaded rectum may produce a forward variation.

Normally the mid plane of the uterus is at nearly right angles to the vagina and in a direct plane to the pelvic inlet. On the contrary the vagina of course should be in a direct plane to the pelvic outlet.

This brief resumé of normally anatomical conditions and variations permits us to better consider and more clearly visualize any abnormal condition.

Mal-position of the uterus is generally brought about by the existence of two factors either a relaxation of one or more ligaments or the production of a hernia of the vaginal vault. Of course there are many things which are the causative factors in bringing about these two circumstances and these are too numerous to permit of consideration here.

Relaxation of the ligaments brings about two main displacements, anti-position (either flexion or version) and retro-position (either flexion or version). Of course a lateral tilting may

we later find a pronounced infective cystitis supplementing the mechanical and chemical cystitis.

With the retro-postures of the uterus we find rather a different syndrome, persistent dull backache, marked constipation with the result many times of obstipation, marked persistent occipital headache, apathy and interfered circulation resulting in skin papules and pustules.

Jointly with both the ante and retro postures we get marked dysmenorrhea, limited menstrual flow, delayed menstruation, irregularity of

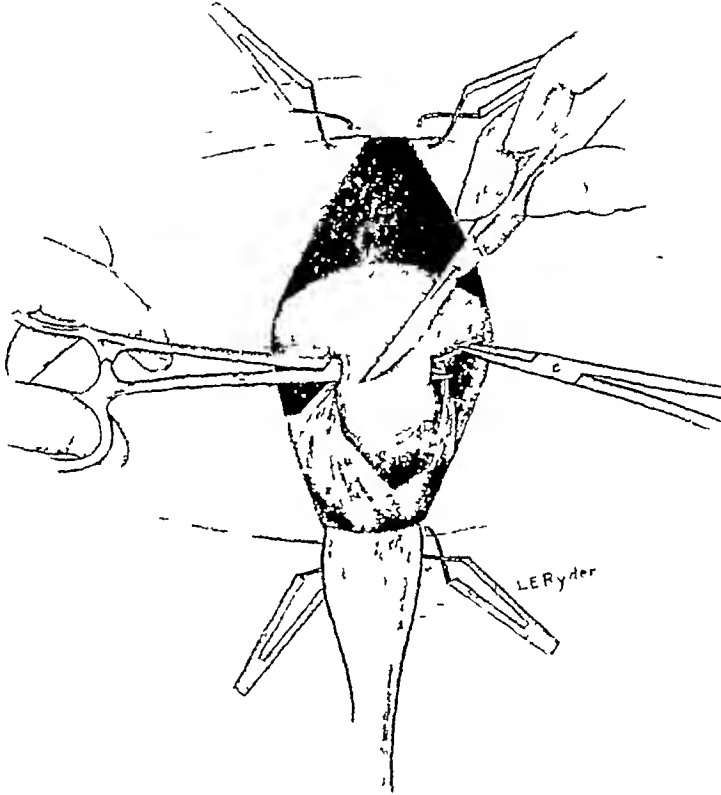


FIGURE 4 The free ends of the peritoneal bands held by the two forceps are then pulled tight in opposite directions until the uterus is raised to the proper position. The edge of a scalpel is then drawn sidewise for about one-half inch between the two openings already made in the uterus in order that the surface may be denuded and the peritoneal bands become fixed as seen in Figure 5.

also co exist but does not produce the same marked signs and symptoms as the former two and is therefore nearly always merely a secondary factor.

With the anti-posed uterus we get signs and symptoms referable principally to the urinary bladder such as vesical frequency, tenesmus at times retention and a persistent bearing-down sensation united about the bladder.

Over a long period we find developing a chronic cystitis as shown by the urinalysis and symptoms referable to the urethra such as a burning and smarting micturition. The bladder wall becomes folded upon itself and sacs form within which collect pools of urine which undergo chemical disintegration. As a result

menstruation and a secondary endometritis or endocervicitis resulting in most disagreeable leukorrhea. Also we may have a phlebotaxis of the broad ligaments and more closely associated with the retro-postures, a chain of nervous symptoms resulting in a varying degree of neuroses which very greatly invalidate and incapacitate the patient.

In adolescence how often we meet those cases of delayed maturity not referable to any endocrine cause but merely a mechanical feature of a malposed uterus! This should cause an immediate search for relief for the unfortunate girl.

Occasionally there is seen in the multipara hernia of the vaginal vault with its resultant

partial or complete procidentia. Here we find co-existing not the relaxed ligaments but the over stretched ligaments secondary to the long standing chronic weight dragging from below. Here we find the vaginal vault partially or completely herniated and the uterine ligaments stretched as to give a threadlike appearance

to do all in our power not only to relieve but to cure these various pathological conditions and return the unfortunate victims to normal health. No field offers a wider range of service and an execution of professional judgment. To return these younger and older women to a life of good health and happiness is fully compensated



FIGURE 5 The points of the piercing forceps having been brought together by the assistant the operator ties them firmly with No. 2 Chromic catgut. The piercing forceps are then released leaving the improvised peritoneal ligaments resting firmly down on the denuded area of the fundus and tied together.

if of peritoneal folds, the tissue is of the consistency of paper.

With this condition present we get practically all of the previous signs and symptoms present. Here we find the head of a large family more or less invalidized and in many instances quite unable to perform the ordinary duties of the household. This in itself from an economic point of view means very much to a family.

We as a medical profession are morally bound

by the personal gratitude shown by the patient and the satisfaction which naturally is ours in the accomplishment.

With this end in view some decade or more ago we devised a systematic method of ventral suspension which, in the great majority of cases, resulting in more or less complete relief. In some cases additional surgical interference has been necessary because of the diseased uterine adenexia or co existing tears in the vaginal floor.

or vault which were, of course, attended to at the same sitting

Over this period of time we have systematically followed up the cases by periodical questionnaires and repeated subsequent observation and examination. From the files we have taken,

mentioned some dull pain in the lower abdomen at different times. Of these, two mentioned also leukorrhea being present, one mentioned constipation and one had an occasional burning and smarting micturition. The two remaining cases showed improvement in menses but they had

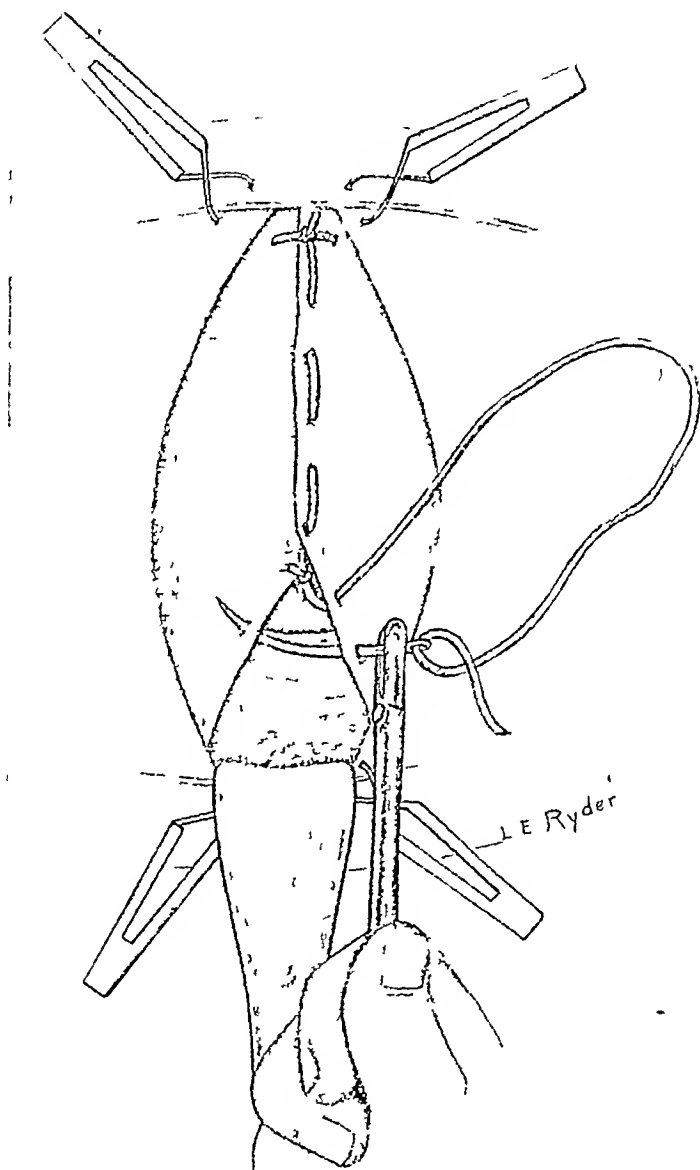


FIGURE 6 Shows method of closing peritoneum

without selection, one hundred cases in which this operation has been done. By checking up on the returned filled out questionnaires of these cases we find that ninety-two of them have reported. Of these ninety-two cases eighty-six cases report that they are perfectly well and not bothered with the previous signs and symptoms. Of the remaining six cases four replied that menstruation was normal but they men-

much pain in the lower abdomen and could not do a good day's work. They also complained of getting tired out easily.

OPERATIVE TECHNIQUE

The technique of this operation is as follows—a moderate, median line incision is made and the pelvic cavity carefully explored. The fundus of the uterus is then delivered and

grasped in tenaculum forceps. With fine, pointed hemostats the peritoneum edges are grasped on each side of the wound at a point two inches above the lower angle. With scissors an angular improvised ligament is then made on each side, the hemostatic grasp forming the apex of this angle and the base being toward the pubes. When these improvised ligaments are established the hemostats are permitted to drop on their respective sides thus holding these ligaments to one side. With a pair of fine picked hemostats the anterior wall of the fundus of the uterus is pierced from left to right forming a tunnel about three-quarters of an inch in length. As the point of these hemostats emerge on the right side, the grasping blades are separated and an assistant places the angle of the right improvised ligament between these blades which are then closed and this improvised ligament is drawn through the tunnel reappearing on the left with hemostat serving as an anchor. The assistant then passes a similar hemostat through the tunnel from right to left and the blades are separated to grasp the left improvised ligament at its angle and in the same manner as the right ligament it is drawn through the tunnel from left to right. With a sharp scalpel the endothelium of the peritoneal covering of the fundus uteri between these two ligaments is lightly scraped away for the purpose of producing a raw surface over an area some half inch in diameter. The angular ends of the ligaments are then brought together outside of and anterior to the tunnel and tied together with a ligature of No. 1 Chromic catgut. The ligament hemostats are then removed and the free ends of the ligature anchored with a hemostat. The uterus will then be found to be held in a slightly anterior posture. The abdominal wound is then closed in the usual manner except that the catgut suture closing the peritoneum is tied to the free ends of the ligament ligature and all free catgut ends cut. As time goes by the improvised, peritoneal ligament organizes and stretches to about one to one and a half inches in length thus permitting the uterus to regain normal posture.

This operation has given very satisfactory results in returning these suffering women to good health. In not a few instances some of these women have subsequently become pregnant and made normal and relatively comfortable deliveries. In a few cases multiple deliveries have been recorded. This in itself would go to support the worth of this operation, to say nothing of the relief afforded from the signs and symptoms complained of previous to the operation.

DISCUSSION

DR. CLIFTON S. ABBOTT, Laconia. Dr. Foster has given us a most interesting paper. He has beautifully described a very ingenious operation, which has given him wonderfully good results.

The subject is a timely one, for there is a confusion of ideas or difference of opinion in regard to the management of these cases. Many deny that uterine displacement of itself causes symptoms or needs treatment. This view has been accepted to such an extent, that the pendulum has swung too far toward the non-operative side, resulting in the neglect of many cases that need surgery. From a causative point of view uterine displacement can be divided into four classes. First, congenital, found in young single, or sterile married women. The uterus is small and freely movable. This is a symptom of underdevelopment and is usually associated with other symptoms of the same, as general abdominal ptosis, separation of the rectus, stasis back, weak sacroiliacs and flat feet. In these cases the uterine displacement has but little to do in producing disability. The deduction is that when a uterine displacement is found in a young nulliparous woman a most searching examination for other trouble should be made before operating for uterine displacement.

The second class, which is the largest is due to the trauma of childbirth. The treatment is surgery. These cases usually have complications in addition to the displacement. The correction of the displacement is only a portion of a general repair job, but an important one, for if omitted the patient is not cured. The third class comprises those cases caused by the contracture of adhesions due to pelvic inflammatory disease as pyosalpinx, ruptured cysts and appendicitis. The fourth class is caused by the weight or pressure of tumors. The treatment of these cases is obviously surgical.

In borderline cases, where one is not certain whether to operate or not, doubt can be cleared up by the use of a pessary. If the pessary gives relief an operation will also without the disagreeable features associated with wearing a pessary.

In considering the treatment of uterine displacement, one is impressed at once by the large number of operations designed to accomplish the same thing. This shows that *none* are satisfactory in all cases or to all operators. Generally speaking one can remember that it requires but little force to hold a uterus in place if correctly applied, for the intra-abdominal pressure is a great aid in maintaining position.

No operation should be done that will leave bands or pockets that could cause an intestinal obstruction.

Our own preference for some time has been for the following procedures: Simpson-Montgomery subperitoneal transplantation of the round ligaments, or Webster-Baldi posterior implantation of the round ligaments. In cases of large heavy uteri where pregnancy is not a factor hysterectomy with implantation of round and broad ligaments into cervix or vagina has given us better results than any suspension or

fixation. In the prolapse of old women the Watkins Interposition has proven very satisfactory.

DR. JOHN DEITCH, Manchester. As only an occasional operator, I feel the need of stressing the fact that the percentage of successful operative results in the case of the busy surgeon are always high, while only too often the reverse is true in the case of a "physician and surgeon" who does but a few cases during the year. And with good reason! The busy surgeon with his large number of cases learns to differentiate between pathology and an abnormal condition, while this differentiation is most likely to escape the less experienced one. With this view in mind I would like to consider two forms of uterine mal-positions in two groups of patients.

The first group comprises a large number of nulliparae. Of these we have two types, one with a displaced uterus and without any symptoms, a patient of this type usually comes to the physician to consult him about sterility, the other one is one that has a mal-posed uterus associated with the subjective symptoms as outlined by Dr. Foster, such as backache, dysmenorrhea, nervousness, etc.

One finds that in either type of this particular group of patients the anterior vaginal wall is short, the cervix is low down in the vagina and the fundus of the uterus is tipped considerably backwards. In these cases one should always have in mind a condition of congenital laxation of the pelvic organs, a condition of infantilism which may exist in an otherwise perfectly developed individual.

An attempt to reconstruct the position of the uterus in this group of patients through an abdominal operation with the idea of relieving symptoms or overcoming sterility is very often likely to result in failure. In doing so, one is attempting to change what is a normally placed uterus in these particular individuals to a pathological position, the patient after such an operation is much worse off than before the operation.

The other form of mal-position that I want to consider is found in a large number of multiparous patients after menopause. Here again we may find a train of symptoms incident to menopause changes and with the mal-posed uterus the temptation is very strong to suggest operative procedures as a means of relieving the patient of her symptoms, but one should bear in mind that at this period the position of the uterus in retro version is physiologic and not pathologic. The musculature and the tone of the uterus aid in the support of the uterus in its normal anatomical position. A uterus which has born several children loses a good deal of its musculature and naturally its tone is lost and it recedes backwards. But for the fact that the uterus is small and light in this age, it seldom retroverts to such an extent as to become responsible for all untoward symptoms.

In any form of uterine mal-position where a pathological condition is definitely established the suspension operation through the abdominal route is considered by many authorities the operation of choice. Whatever method is to be used it should

First, tend to restore the uterus to its normal position.

Second, it should be compatible with pregnancy as the individual case may require.

Third, should pregnancy occur the suspension should still retain the uterus in its normal position after involution, and

Fourth, the suspension should be strong enough to hold up a moderately relaxed pelvic floor.

I do not include here the cases with marked prolapse which may also require an additional operation by the vaginal route.

There are many methods used by eminent surgeons and gynecologists for this purpose. The method adopted by Dr. Foster and which I have the privilege of being familiar with is one of great merit. But it is by no means the ideal one in every case. The operation is short, the technique is simple. It is compatible with pregnancy, and the results are gratifying in the majority of cases, but in obese patients where the peritoneum is often found to be very thin and infiltrated with much fat, or in patients with much pelvic congestion, where the uterus is large and heavy, or in patients with a moderate prolapse, in my opinion, improvised peritoneal ligaments are not conceivably competent. I believe therefore, there ought not to be one method for all types of cases of mal-posed uterus but a method for different types of cases.

DR. FOSTER. I think we have previously discussed this subject as to the influences regarding this thing and that. What we have produced here is an illustration of satisfactory end results. I do not think we can cure all the pains, nor do I think the surgery in these cases should be expected to immunize patients for life against all other ills. I am reminded of the story of a physician who was attending a medical meeting and heard a paper about somebody who cured all women while attending them in childbirth. This physician was asked to discuss the paper. He arose and among the things he stated was that he had, "never heard of such a remarkable physician as one who when he entered the sick room he had one patient and when he came out he had two." Perhaps our efforts, in every instance, will not cause our patients to respond to our service. We get patients, and in treating them we may fail and they pass on to another member of our profession. We do not hear so much about this factor in the practice yet it happens to us all if we live long enough. The majority, I think, do get relief and we certainly do not fall short in our endeavor to fulfill our agreement, win or lose.

DR F E CLOW I believe that one of the important factors in the cause of this condition is the indulgence in strenuous athletics at the menstrual period. Athletic directors are doing a real harm in allowing young girls at a time when the uterus is engorged and ready to participate in sports. It has been demonstrated beyond a doubt that permanent damage

has been done in situations of this character. I think that the statement that surgery is indicated in post partum malposition is too radical. The obstetrician is not doing his best for his patient when he allows her to leave the hospital without final examination and the insertion of a pessary when indicated.

THE PHYSICIAN OF THE FUTURE*

BY CLIFFORD S. EMERSON, M.D.

IN this short paper I do not expect to bring anything new to you but to call your attention to some things to which we, as physicians, do not give enough thought.

The question is often asked "What is to become of the physician of the future?" What is to become of that vast body of men who are doing everything in their power to make their services required less and less in the treatment of disease? What is their work in the future to be and how shall they be paid?

Preventive medicine is coming to the front more and more every year and with the vast number of vaccines, serums and antitoxines which are being used not only to prevent disease, but to make them less severe and of shorter duration it is little wonder that thoughtful physicians are beginning to ask themselves: Will there be any work for them in the future when preventive medicine shall have reached that stage of perfection where epidemics of contagions shall cease and the long continued fevers become so scarce that they can no longer be depended on to furnish any part of their living? This, to some may seem a long way in the future but the time is already at hand when such diseases as smallpox and typhoid fever have become so scarce that the ordinary physician rarely ever sees a case of either and they can no longer be depended on to furnish them any part of their yearly work.

Twenty-five or fifty years ago at this season of the year, typhoid fever furnished the physician with the major part of his practice.

Diphtheria is another disease which is fast joining these other two. The Health Commissioner of New York City has as his slogan—"A State free from Diphtheria by 1930." This they expect to accomplish by preventive methods, the Schick test and the toxin antitoxin treatment.

The American Child Health Association at its annual meeting goes even farther and passed resolutions to the effect that it is even possible to eliminate diphtheria from the whole United States in a few years.

Scarlet Fever is receiving a good deal of attention and the time is not far distant when we shall see far fewer cases of this disease than we do at the present time.

Read at the Annual Meeting of the New Hampshire Medical Society at New Castle, June, 1927.

Serums for pneumonia in the past have been disappointing but new ones are being worked upon continually and one will eventually be perfected which will largely prevent this disease and in those cases in which it does occur it will modify its course and make it much less severe and fatal.

Whether we are enthusiastic about the bacterin treatment as a preventive of colds, influenza etc. we find that those who have taken the treatment are the ones who return year after year for a renewal of it, and eventually we shall have fewer colds to treat.

The Hay Fever victims do not have to look forward any longer with dread to their annual summer or autumn attacks for with the new methods they can be desensitized to the pollen to which they are susceptible, and the attacks be warded off.

We all know of the work which has been done by physicians to eliminate malaria, yellow fever, the hookworm disease, and others which might be mentioned but enough has already been presented to indicate the present trend of preventive medicine.

We also have many indirect preventive methods beginning with the prenatal care of the mother to make the confinement safer for both the mother and child. The State, through the Sheppard-Towner Bill, would willingly look after this part of our work for us, if it were possible for it to do so.

We have the baby clinics where mothers are taught how to care for, clothe and feed their babies, they are also told what to do in all the little ailments to which the babies are subject.

Both the State and the government are flooding the mails with literature on both these subjects, and many mothers and prospective mothers are looking to such sources for information.

We are beginning to have the pre school clinics where the children are examined with a view to detecting any physical defects and advice given the parents as to the proper methods to correct same.

Then there is the frequent examination by the school physician and a school nurse. The examinations extend all through the child's school life where they check up on anything which

has developed since the pre-school examination or which has not been attended to since that examination

We have our tuberculosis clinic where the State takes over the care and treatment of all cases which apply to, or are referred to them

We have clinics for almost every conceivable disease to which children or adults are subject. And as such preventive methods are perfected more and more, as they will be in the future, we may well ask ourselves what there will be left for the average physician to do

We will mention only two solutions which have been advanced to provide for the physicians of the future

The first is State Medicine, where every physician is employed by the State at a fixed salary, and assigned to a certain territory, or district, or town, and will be expected to care for the locality assigned to him. Not all physicians would receive the same salary, but it would depend to some extent upon the amount and kind of work they were expected to do

Some writers predict that State medicine will be adopted during the lifetime of many of us. To those of us who have practiced independently for a number of years under the present system, State medicine does not appeal. If it ever gains any headway among physicians, it will be through recent graduates who wish to be assured of a living from the start

Much the better solution is, for every physician to accept the changes in medical practice as they appear, to realize that an evolution has taken place and is to take place in the future, and to qualify himself to meet these changes

We should be just as resourceful in practicing preventive medicine, as we have been in the past in treating the diseases under our care. We should not allow the State or the government to take over any work which properly belongs to us through lack of efficiency or initiative on our part. The average physician should be better qualified to give the expectant mother that intelligent care and attention which is necessary to enable her to pass safely through her pregnancy and confinement than she can possibly obtain through reading any number of pamphlets or bulletins, for the physician comes in personal contact with those under his care and knows their physical condition and their individual needs. We should in every way encourage these women to consult their physicians regularly and the routine examination, instructions as to diet, clothing, exercise, fresh air, personal hygiene, etc., should all receive special attention. The physician who is to care for and be responsible for the mother at the time of confinement has every reason to expect that mother to place herself in his care long before the date of confinement and as the years go by the physician will have more and more of this work to do as there is no other method by which the desired results can be accomplished

The public is coming to believe that for every disease which has affected mankind in the past, there is a serum or anti-toxin. Now we know that some of these remedies are very valuable, both as preventive and curative agents. We also know that many of the new serums which are being placed on the market are not only useless, but very expensive. During the next few years many new serums and vaccines will be advocated by their manufacturers. We should inform ourselves as early as possible as to the value of each, that we may intelligently advise those dependent upon us as to their use.

Periodic Health Examinations offer the best prospect for the future income of the doctor

The public is beginning to realize that it is much better and easier to keep well than it is to regain health after it has been impaired. It is also beginning to know that the way to do this is to be examined at stated intervals by one's physician

We, as physicians, should realize that much of our work in the future will be along these lines and we should encourage it and should prepare ourselves to do this work in a thoroughly systematic manner. We should perfect ourselves in normal conditions, that we can more readily discover any departure from the same. These examinations should include every member of the family, and a record of each one examined be carefully kept. These examinations which bring the physician into close touch with his families will do more to restore the relations which formerly existed between the family physician and his patients than any method which has ever been suggested

In the past, the physician's whole duty has been to cure the sick after some disease had gained a foothold, the successful physician being the one who was the most skillful in diagnosis and treatment

Physicians in the future, with the best reputations, will be those who possess the ability to forestall and steer their patients away from sickness,—and as time goes on, they will become more expert in these respects

The physician's income depended,—and to a large extent still depends,—upon the number of visits he made during the year to those who were actually sick. This system is a hardship to the family, who at the time of illness can least afford the expense of the physician's services

When preventive medicine was unknown, this system of paying the physician only when his services were needed, was really the only basis on which to judge of his worth

In the future, the public is going to think more and more of how to live, and how to keep well, and will more willingly pay physicians for advice on these subjects than they have in the past for treating their illnesses

Physicians have had to have a broad general knowledge of diseases and the best methods of treating them. In the future, they will be

expected to have this same knowledge and in addition will have to know all the best methods of preventive treatment and be equipped to recommend and apply them. The work of the physician in the future will not be diminished by preventive medicine, but will be constantly increased and his scope of usefulness broadened. His financial rewards will depend, as it does now, upon his ability to successfully care for the people in the community which he serves.

DISCUSSION

A MEMBER Preventive medicine is on the rise, and I think we should be careful that we keep that child within bounds. A statement in the Medical Journal said, "It might have been expected to happen sooner or later. We are in receipt of a letter addressed to the physicians of Newark enclosing an estimate of cost of establishing, in New York City, an Institute to furnish instruction along the lines outlined by Dr. Emerson. Nothing was said about the charge for the service. It ought not to be necessary to warn physicians against some of the practices. The laborer is worthy of his hire, and the examiner should not have to share it with any minor organization, I think we should enter upon the work of periodic examinations and keep our child under control."

DR WILKINS, Manchester This paper by Dr. Emerson is certainly a very thoughtful one, and certainly of interest to all of us. We must recognize the changed conditions, as Dr. Emerson says. I think the reason for appearance of the institutes and the various things of that sort which have been mentioned, is due to the inertia of the members of the medical profession itself. When the patient goes to the physician and asks for treatment, and the doctor says "You are all right", the patient is not getting cooperation. That condition has existed, but it should not. I think we should take upon ourselves the practice of health examinations and illustrate the system by our own adoption of it.

THE APPOINTMENT OF DR. JOHN J. TOPHAM

It is announced that Dr. John J. Topham of South Berwick, Me. will occupy the position of university physician in the University of New Hampshire at Durham. He is to succeed Dr. Nathan Griffin who died about a year ago. Dr. Topham has practised in South Berwick for the past seven years. He is a graduate of the University of Maine where he did his pre-medical work, while he secured his degree of doctor of medicine from the Bowdoin School of Medicine. During the World War he served in the Medical Corps of the United States Army as a first lieutenant.

ASSAILS STOP WATCH EDUCATION

(Continued from page 78)

tures grave discomfiture in the meantime, no go the hands of many of the child's classmates. They are vying for attention. They are wishing that the child attempting to recite may fail, so that as he fails

they may be allowed to demonstrate their excellence. Upon the fallen body of their comrade do they climb to win approval. But the reciting pupil rather than have them profit by his seeming loss ventures some reply. If he does not know he guesses. When the modern schoolroom is running at its best, as approved by many a supervisor, it is at its worst from the standpoint of mental hygiene from the angle of efficiency of learning. Be it remembered that any child learns best when he is most nearly comfortable. Obviously too, the modern mania for speeding furthers intellectual dishonesty and impairs the pupil's personality.

After expressing hope in the 'progressive education' movement now under way and some improvements in educational practice that have already resulted, Dr. Myers advances the following suggestions as specific remedies for the situation described:

1 First recognize that the most effective learning presupposes a comfortable learner.

2 Let the educational testers call a halt to their testing program. Some of them should be given a leave of absence with pay for a year or two until the teachers and their children have an opportunity to quiet down.

3 Remove all speed suggestions from the school room. Assemble all the stop watches of the school except those used for experimental purposes, and have them annihilated. Persuade the writers of textbooks to cease to put timed lessons in the pupils' books. Substitute accuracy and calm for carelessness and haste.

4 Let supervisory schemes be simplified. Let the supervisor cease to be a peddler of pet methods and become instead a salesman of the psychology of learning. Let her purpose be to study how the pupil learns and to inspire her teacher also to study him from this point of view.

5 Let more be done to relieve the teacher of unnecessary work and to encourage her to introduce more human touches into her teaching. Let her be given guidance and materials that will enable her to reach the individual pupil. The development of individual instruction exercises for self-teaching are in the right direction for in addition to relieving the teacher of much drudgery, they allow the pupil to progress at his own speed and show him how to teach himself.

6 Let those responsible for the curriculum lessen the number of specific facts and skills which the average child is supposed to master in a given time. Let there be considerable cutting down of the requirements for the slower pupil. All along the line from the first grade through to the university there should be more differentiation so that instead of one diploma for each high school and college there shall be several each of which shall stand for a very definite accomplishment defined thereon.

7 Let educational experts and school officials confer more frequently with parents to discover how they feel about the curriculum and methods of the modern school. Let school authorities more often seek advice of clinical psychologists and psychiatrists who are now dealing with the many cases that come from among school children and school teachers.

8 To the school psychologist add the school neuropsychiatrist who will check up on the mental health of school children and teachers and advise the school authorities as to methods and curricula in terms of mental hygiene. And of course no school system can consider itself as furthering a good program of mental health without an adequate force of visiting school nurses. Certainly many a child and many a teacher could by a saner program be saved from the mounting scrap heap of human wreckage.

has developed since the pre-school examination or which has not been attended to since that examination

We have our tuberculosis clinic where the State takes over the care and treatment of all cases which apply to, or are referred to them

We have clinics for almost every conceivable disease to which children or adults are subject. And as such preventive methods are perfected more and more, as they will be in the future, we may well ask ourselves what there will be left for the average physician to do

We will mention only two solutions which have been advanced to provide for the physicians of the future

The first is State Medicine, where every physician is employed by the State at a fixed salary, and assigned to a certain territory, or district, or town, and will be expected to care for the locality assigned to him. Not all physicians would receive the same salary, but it would depend to some extent upon the amount and kind of work they were expected to do

Some writers predict that State medicine will be adopted during the lifetime of many of us. To those of us who have practiced independently for a number of years under the present system, State medicine does not appeal. If it ever gains any headway among physicians, it will be through recent graduates who wish to be assured of a living from the start

Much the better solution is, for every physician to accept the changes in medical practice as they appear, to realize that an evolution has taken place and is to take place in the future and to qualify himself to meet these changes

We should be just as resourceful in practicing preventive medicine, as we have been in the past in treating the diseases under our care. We should not allow the State or the government to take over any work which properly belongs to us through lack of efficiency or initiative on our part. The average physician should be better qualified to give the expectant mother that intelligent care and attention which is necessary to enable her to pass safely through her pregnancy and confinement than she can possibly obtain through reading any number of pamphlets or bulletins, for the physician comes in personal contact with those under his care and knows their physical condition and their individual needs. We should in every way encourage these women to consult their physicians regularly and the routine examination, instructions as to diet, clothing, exercise, fresh air, personal hygiene, etc., should all receive special attention. The physician who is to care for and be responsible for the mother at the time of confinement has every reason to expect that mother to place herself in his care long before the date of confinement and as the years go by the physician will have more and more of this work to do as there is no other method by which the desired results can be accomplished

The public is coming to believe that for every disease which has affected mankind in the past, there is a serum or anti-toxin. Now we know that some of these remedies are very valuable, both as preventive and curative agents. We also know that many of the new serums which are being placed on the market are not only useless, but very expensive. During the next few years many new serums and vaccines will be advocated by their manufacturers. We should inform ourselves as early as possible as to the value of each, that we may intelligently advise those dependent upon us as to their use. Periodic Health Examinations offer the best prospect for the future income of the doctor

The public is beginning to realize that it is much better and easier to keep well than it is to regain health after it has been impaired. It is also beginning to know that the way to do this is to be examined at stated intervals by one's physician

We, as physicians, should realize that much of our work in the future will be along these lines and we should encourage it and should prepare ourselves to do this work in a thoroughly systematic manner. We should perfect ourselves in normal conditions, that we can more readily discover any departure from the same. These examinations should include every member of the family, and a record of each one examined be carefully kept. These examinations which bring the physician into close touch with his families will do more to restore the relations which formerly existed between the family physician and his patients than any method which has ever been suggested

In the past, the physician's whole duty has been to cure the sick after some disease had gained a foothold, the successful physician being the one who was the most skillful in diagnosis and treatment

Physicians in the future, with the best reputations, will be those who possess the ability to forestall and steer their patients away from sickness,—and as time goes on, they will become more expert in these respects

The physician's income depended,—and to a large extent still depends,—upon the number of visits he made during the year to those who were actually sick. This system is a hardship to the family, who at the time of illness can least afford the expense of the physician's services

When preventive medicine was unknown, this system of paying the physician only when his services were needed, was really the only basis on which to judge of his worth

In the future, the public is going to think more and more of how to live, and how to keep well, and will more willingly pay physicians for advice on these subjects than they have in the past for treating their illnesses

Physicians have had to have a broad general knowledge of diseases and the best methods of treating them. In the future, they will be

deal since his previous admission. He had attacks of dyspnea and considerable abdominal distress and nausea. He got some rest with morphine. At the end of a week he began to make some improvement and by June 21 was up with comfort but with resulting slight edema. The lungs continued clear. July 5 he had quite a severe smothering attack immediately relieved by amyl nitrite. He had numerous slight attacks of dyspnea with slight precordial pain chiefly at night. The condition grew slowly but steadily worse. By July 23 there were a few moist râles at the bases. The heart action was growing steadily weaker. That day he was rather stupid with Cheyne Stokes breathing. He was comfortable with small doses of morphine. The pulse became slightly more rapid. There was evidence of a small amount of fluid at the bases posteriorly. July 26 he died.

DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTES ON THE PHYSICAL EXAMINATION

His chest was deformed so that the heart cannot be altogether relied upon.

The apex impulse was sixteen centimeters at first "fifteen and a half" now. If anybody thinks he can percuss half a centimeter he has a good deal to learn about percussion. I think.

We have a man who comes in for typical cardiac symptoms, the cardiac symptoms of an old man with a weak heart, that is ordinarily a man who is suffering from a hypertensive type of cardiac trouble. His past history does not help us, and the physical examination gives evidence of a big heart plus a systolic murmur plus passive congestion.

Have we any reason to interpret that systolic murmur as evidence of a valvular disease? If it is evidence of valvular disease it has to be evidence of aortic stenosis. If it were that disease we ought to have a palpable thrill, a diminished aortic second sound, neither of which we have and a characteristic pulse of which nothing is said. We cannot therefore on the data before us make the diagnosis of aortic stenosis, and of course with no diastolic murmur we cannot make the diagnosis of aortic regurgitation. Can we make the diagnosis of mitral disease? No, we cannot. Systolic murmurs alone do not give evidence of mitral disease. It is perfectly possible there was another murmur here which was missed but we cannot say so. There is the formal possibility of congenital heart disease, which we have no reason to expect. We come back then to what I spoke of in the beginning,—an enlarged heart and nothing else.

That is what we should have said at that time. The chances are that we said "myocarditis," the usual diagnosis at that time in an old man with

a weak heart. It is possibly a true diagnosis but one that we have no physical signs to support. The fact that this trouble came on within quite a short period, a few months, does not argue against its being the chronic disease which I have supposed nor does his recovery militate against that. Hypertensive heart disease is my opinion up to the time of his going to the convalescent home.

Apparently he can be well so long as he is at rest; he cannot be well so long as he tries to work. He is an advertising solicitor so presumably he had to walk about and go up and down stairs which would naturally be too much for a person with his trouble. He comes back in just the same state that he was before. This case presents the wide deep social problem we are always meeting in this hospital. We do not meet it quite so often now, because we try to anticipate it. If we bring a man into a hospital with a disease like this give him a pretty expensive treatment, and send him out we know that he will come back with exactly the same trouble, having undone all the good that was done in the hospital. We think to-day that we ought to try to go a little deeper and try to prevent his undoing all that has been done in the hospital. Even from the most hard-hearted point of view—a pecuniary one—it is a waste to give a man a treatment like this when we know it will be all undone when he goes home.

If the second examination is correct his heart is a little larger than before. Presumably he has auricular fibrillation. They did not make that diagnosis here at the date to which this record refers but that is what it sounds like.

Lateral excursion of the brachials is what we get with arteriosclerotic arteries. Instead of moving only up and down in their beds they go sideways because of their tortuosity.

The chief thing that is added by the observation of his second stay in the hospital is evidence tending to make us think of disease in the coronary arteries. He has some pain and he has sudden attacks of distress and dyspnea. Other than that we have no important new facts. The gravity of his urine is somewhat lower, and there are rather more casts, but we still have rather little on which to build any diagnosis of nephritis. We have a rather queer murmur which I feel worried about,—worried for fear we shall make a mess of its diagnosis. But that is all in the way of new facts.

DIFFERENTIAL DIAGNOSIS

Now what can we say? We certainly can say he ought to have arteriosclerosis, a hypertrophied and dilated heart, chronic passive congestion of his lungs and his liver and presumably everywhere else. Beyond that we are not safe in saying anything. But it seems to me rather probable that he had some coronary narrowing and rather improbable that he had a

Case Records
of the
Massachusetts General Hospital

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 14021

**THREE WEEKS' DYSPNEA, WEAKNESS
AND COUGH**

MEDICAL DEPARTMENT

First admission An American advertising solicitor sixty-three years old entered March 30

For three weeks he had been getting short of breath, had felt weak and had had dry cough. His legs and ankles had swelled. For the past few nights he had had to get up and sit in a chair in order to breathe. He was much troubled with gas on the stomach, which always gave him a sense of suffocation. He urinated once or twice at night.

His family history is unimportant.

He had gonorrhea once when he was young. He had rheumatic fever (?) at twenty-three. For the past forty years he had been well until the autumn before admission. Then he had "grippe" with slow recovery. In January he had a cold which persisted several weeks.

Clinical examination showed a poorly developed and nourished man breathing rapidly. Mucous membranes pale and slightly cyanotic. Right lateral scoliosis with marked prominence of the chest on the left in front. A forcible apex impulse was diffusely felt in the fifth and sixth spaces. Left border of dullness 16 centimeters from midsternum, 5.5 centimeters outside the nipple line. Right border 1 centimeter from midsternum (chest deformed). No increase in retrosternal dullness. Rhythm regular. Sounds of fair quality. Over the aortic area was a rough systolic murmur transmitted towards the base of the neck. Aortic second sound sharply accentuated. Pulses irregular, of fair quality. Artery walls showed marked fibrous and calcareous thickening and tortuosity. Systolic blood pressure 150. Lungs hyperresonant throughout. Poor expansion. Breath sounds prolonged on expiration. Voice and fremitus negative. Abdomen distended, rather tense, tympanic. No masses or tenderness made out except over the liver, where there was slight tenderness on deep palpation. Liver dullness from the sixth rib to three fingerbreadths below the costal margin. Edge indefinitely felt. Brawny edema of both ankles. Pupils equal, irregular, reacted sluggishly. Reflexes normal.

Amount of urine normal, specific gravity 1.012 to 1.026, the slightest possible trace to a slight trace of albumin at all of four examinations, granular casts at two, a few with cells adherent. Blood normal.

Temperature 94.9° to 98.1° Pulse 63 to 95. Respirations normal.

An oculist found the fundi practically normal. The right eye showed a small round pigment spot near the macular region, as if a spot of old choroiditis.

By April 3 the edema was nearly gone and the cardiac signs much better. The patient was having good nights and much less discomfort. He continued to improve. The heart was at times somewhat irregular. April 11 the apex impulse was in the sixth space 15.5 centimeters from midsternum. There was a systolic murmur over the precordia transmitted to the axilla. The aortic murmur was unchanged. April 15 the apex impulse was seen and felt in the anterior axillary line. The action was regular. The sounds remained distant and indistinct except at the apex. The patient was very comfortable. April 20 he was discharged relieved to the Waverley Convalescent Home.

History of interval After leaving Waverley he felt very well. He went back to work and had no symptoms. May 29, a month later, he again had dyspnea and gastric distress with a sense of suffocation. He also had slight edema. He could not sleep, and had to sit up in a chair most of the time.

Second admission, June 8, six weeks after his discharge.

Clinical examination (As before except as noted.) Apex impulse of the heart seen and felt diffuse and rather forcible in the fifth, sixth and seventh spaces, best felt in the sixth space as far out as 16 centimeters from midsternum, 6 centimeters outside the nipple line. Rhythm irregular. Rate rapid. Sounds of poor quality. Second sound everywhere faint. Over the left precordia a short high pitched loud systolic murmur transmitted to the axilla. Pulmonic second sound equal to aortic second sound, not accentuated. Pulses of poor quality, small and irregular, less than half the beats reaching the wrist. Moderate lateral excursion of the brachials. Blood pressure 125 systolic. Breath sounds loud. Prolonged expiration. Liver dullness from the fifth space to one inch above the umbilicus, where a rounded tender edge was felt. Feet cyanotic and cold.

Amount of urine normal, specific gravity 1.008 to 1.016, color high at three of six examinations, reaction alkaline once, the slightest possible trace to a very slight trace of albumin at all examinations, hyaline casts at all, with fat at three. Blood 16,000 to 10,000 leukocytes, polymorphonuclears 73 per cent, hemoglobin 85 per cent.

The patient was found to have failed a great

the patient had never been bitten by a dog but that six months previously he had been bitten by a cat which had been injured or bitten by a dog. That day the patient took little except two grapes, two tablespoonfuls of orange juice and two tablespoonfuls of water. The morning of admission he ate all of his breakfast, but was horrified at the sight or thought of water. When he was induced to take a little the act threw him into a paroxysm of difficult breathing and great excitement.

His family history is negative.

He had typhoid in his youth. Four years before admission he had a rather severe attack of erysipelas on his face. Otherwise his past history is negative. He occasionally took a little whiskey. Everybody who knew him said that he was a fine old man and was never excitable. He seemed a little unbalanced mentally at the time the history was taken and said that he had had an attack similar to this before. This history was strongly denied.

Clinical examination showed an elderly man lying in bed, obviously in great distress. There were periods of appreciable respiratory embarrassment with a quick catching respiration associated with convulsive seizures of the hands and face and an expression of horror. Over the arms, shoulders, face and back of the neck were long abraded and ecchymotic areas due to scratching. The back of the neck was almost one solid area of ecchymosis. The hands and face were of a dusky hue, especially at periods of struggling. The sight of water or the attempt to drink it were the things that caused the seizures most readily. The teeth were poor. Protrusion was present. The chest was barrel shaped. The diaphragm excursions were limited but equal. The pupils were dilated and reacted sluggishly to light. The right was larger than the left. The fundi were negative. The reflexes and the rest of the examination were negative.

Amount of urine normal, specific gravity 1.020, a very slight trace of sugar at both of two examinations, no albumin, sediment negative. Blood 10,000 to 17,200 leucocytes, 78 per cent polynuclears, 8 per cent large mononuclears, many young polynuclears, reds normal in size and shape, well filled with hemoglobin, platelets normal in numbers. Wassermann negative.

Temperature 100° to 103.2°, pulse 65 to 140, respirations normal.

The night of admission the patient was able to take twelve ounces of fluid. The following morning his condition seemed definitely improved, although the nurse said that he had not slept during the night. The ecchymotic areas and scratch marks on his neck were more marked. His ability to swallow water was better and he was less active. At half past ten a lumbar puncture was done through the third lumbar space. 15 cubic centimeters of clear colorless

fluid was withdrawn, pressure 110 before jugular compression, 160 after it, pulse and respiratory oscillations normal, cell count 1 small lymphocyte, 3 subarachnoid cells, globulin, ammonium sulphate and alcohol tests negative, sugar 116, chlorides 736, no clot, colloidal gold 1111000000, total protein 33. By noon he again began to show central nervous system irritation, more phobia towards water and a desire to get out of bed. At 3:20 a quarter grain of morphia and three grains of luminal were given, at 4:15 fifteen grains of triple bromides and at 6:20 a quarter grain of morphia.

X-ray examination October 6 showed the lung fields clear. The heart shadow was within normal limits. The supracardiac shadow was not increased, but the aortic knob was very prominent, as seen in arteriosclerosis. The posterior mediastinal space was clear. The diaphragm was smooth and moved freely and equally on both sides with respiration. The costophrenic sinuses were clear. On swallowing the barium no evidence of laryngeal spasm was noted and the opaque mixture passed without interruption to the stomach. No obstruction or spasm was seen. Sufficient barium to outline the stomach satisfactorily could not be given because of the patient's inability to swallow fluids. There was marked increase in the amplitude of the peristaltic waves. During the difficulty in breathing following the ingestion of the barium the diaphragm moved upward and downward more rapidly, but otherwise nothing abnormal was noted.

A laryngologist reported that examination of the throat was essentially negative. He was interested to note that the patient controlled the movements of the tongue with great difficulty, the muscles of the tongue felt spastic. The house officer noted that when he observed the patient the tongue could be protruded in the midline without tremor or difficulty.

Another consultant obtained the additional history that a week or ten days before admission the patient's daughter noticed that he had some respiratory difficulty on going upstairs.

October 6 two consultations were held over the patient. He was thrown into dramatic paroxysms of horror when given anything to drink. Between times he was very alert and somewhat apprehensive but otherwise not abnormal. His pupils were widely dilated. That night he was far more restless than at any time previously,—attempted a number of times to get out of bed and was somewhat irrational. His temperature had gone up to 102.8° by rectum and his pulse—he was somewhat excited—had risen from 80 to 128. He picked at the bed clothes and spat frequently on the floor. 500 cubic centimeters of intravenous glucose was given.

Notes by the nurse "On the morning of October 6 the patient arrived in the ward at two o'clock acting very queerly, refusing to stay in

complete coronary block As to the source of his cardiac murmurs, especially this peculiar one described at the second entry, I do not know what to say That did not point to anything that we can recognize from the basis of previous experience of similar murmurs Systolic murmurs are the hardest of all murmurs to interpret Frequently even post mortem we cannot say what they mean I do not think that on the facts written in this record we are justified in making any further or different diagnosis

DR R R WHEELER What is the significance of the fatty casts?

DR CABOT I do not think they have any special significance unless they are present in large numbers and continuously Even then I should not think we could go beyond saying that they may mean something in the way of nephritis I have seen them a good many times in cases that were proved not to have nephritis, and I do not think anybody to-day can say what their significance is, any more than I think anybody can say to-day much about fat in other organs We used to worry a good deal more about fat in the liver and in the heart than we do now

A PHYSICIAN If you had had a positive Wassermann in the record would you have changed the diagnosis?

DR CABOT Perhaps we should have changed it, because we have a little evidence of coronary trouble, and syphilitic aortitis tends, by narrowing the mouths of the coronaries, to bring that about Yes, I think if there were a positive Wassermann we should have seriously to consider syphilitic aortitis But we could do nothing more than consider it

A PHYSICIAN They do not usually live so long with it, do they?

DR CABOT His symptoms have not lasted very long

DR WHEELER It is a very big heart for syphilitic aortitis

DR CABOT Yes, unless he had aortic regurgitation, which he apparently has not got That is a good point That is distinctly against it

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Arteriosclerosis
Myocarditis
Cardiac hypertrophy and dilatation
Angina pectoris
Hydrothorax, slight
Chronic passive congestion
Chronic aortic endocarditis

DR RICHARD C CABOT'S DIAGNOSIS

Hypertensive heart disease
Hypertrophied and dilated heart
Arteriosclerosis
Chronic passive congestion, general

ANATOMIC DIAGNOSES

1 Primary fatal lesions

Arteriosclerosis of the aorta and its great branches
Chronic adhesive pericarditis
Fibrocalcereous endocarditis of the aortic and mitral valves

2 Secondary or terminal lesions

Hypertrophy and dilatation of the heart
Infarcts of right kidney
Chronic passive congestion, general
Hydrothorax, double
Edema of dependent portions of the trunk
Compression atelectasis of the lower lobes of the lungs

3 Historical landmarks

Chronic pleuritis

DR TRACY B MALLORY The case is simply one of arteriosclerosis and hypertension The heart was much enlarged, weighing 660 grams The aortic and mitral valves showed a few little spots of calcification, but no deformities The left coronary artery showed one patch of calcification which for a very short distance narrowed the lumen of the artery to about one-fourth the normal size Beyond that area it was perfectly normal The right coronary was capacious throughout There was chronic passive congestion, considerable amounts of fluid in both pleural cavities, and some in the abdomen

One other finding, possibly of significance, was very numerous adhesive bands between the pericardial layers which were described as binding the visceral and parietal layers tightly together They may possibly have some significance in connection with the murmurs

The kidneys were a little small, 232 grams, and showed one area of infarction, but were otherwise not essentially abnormal

CASE 14022

FEAR OF SWALLOWING WATER

SURGICAL AND NEUROLOGICAL DEPARTMENTS

An unoccupied Swede seventy-five years old, formerly a machine-worker, entered the hospital October 5

Two days before admission after working in the garden he had no appetite for luncheon and said he could not drink water then and had not been able to earlier in the morning He took a glassful of milk by spoonfuls with much difficulty He had a feeling of constriction in his throat That night a doctor applied ice to the chest This seemed to aggravate the condition Heat was tried with some relief The patient did not sleep well The doctor ascertained that

which there is spasm of the larynx and the trachea. In this disease, however there is a true spasm, with some permanent rigidity. This patient was quiet and free from his spasm except when provoked by water. There was also no suggestion of a wound and the onset was too sudden for tetanus. The patient was taken ill and died within three days, which would be unusual in tetanus.

We know that the diagnosis of rabies was confirmed in this case by the finding of Negri bodies such as have been found in practically all human cases and in all cases of animals in 1903 when Negri described the so-called Negri bodies in the brain. I have looked up the cases that we have had in the Massachusetts General Hospital since 1878, and later I will say a word about the diagnosis and frequency of hydrophobia.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Rabies

ANATOMIC DIAGNOSIS

Jaundice slight
Hemorrhage, focal subcutaneous of the face, bilateral
Erosion scratches, and abrasions of the skin of the back shoulders, upper arm fore arm, right
Cicatrices of the hand, left
Needle marks of the cubital spaces and of the lumbar region
Passive congestion of the pia arachnoid and of the brain
Edema of the brain.
Synecchiae of the plexura, right
Sclerosis, focal, slight, of the curtains of the mitral valve and of the cusps of the aortic valve
Dilatation, slight of the heart (valve openings)
Endarteritis, chronic focal slight of the coronary arteries
Passive congestion of the lungs, spleen, liver
Hemorrhage perivascular submucous, of the stomach, slight
Chronic nephritis (atrophic form)
Cyst of the kidney, right
Hypertrophy of the prostate with "third lobe" formation
Dilatation, slight, of the aorta
Endoarteritis, chronic, focal, slight

HISTOLOGIC DIAGNOSIS

Rabies Confirmed by animal inoculation

DR. GEORGE BURGESS MAGRATH The death of this patient is the fourth from rabies which I have been called on to investigate in twenty years. Jurisdiction I take in death from rabies as in death from tetanus, anthrax, and septicaemia in general when due to traumatism, on the

ground that they are supposedly due to injury. Therefore this death was duly reported by the hospital early in the morning, and the post-mortem was made about eight hours after death. I was very glad to have as my guests Dr. Mallory and some of the staff and Dr. W. A. Hinton, Assistant Director of Biologic Laboratories in the Commonwealth. He is the official diagnostician for the Commonwealth in the matter of suspected rabies in animals, and in three of the four deaths which I have investigated in Massachusetts he has cooperated with me in the matter of diagnosis.

The pathological anatomy is disposed of in very few words. There was post mortem a slight jaundice of the sclerae and a distinct yellowish tinge of the skin. There were present on the sides of the face and neck subcutaneous hemorrhages. There were erosions scratches abrasions of the skin of the back, shoulders and right upper extremity. There were some small scars of the left hand which I do not believe were due to the injury received, which was described as of the right thumb.

Internally this examination was similar to the examinations of the bodies of the three other men who died from rabies. It brought to light nothing that is pathognomonic of rabies. The conditions which are common to all are essentially general ones. There is generally acute passive congestion in this case exhibited chiefly in the brain and to some extent in the spleen and liver not so much in the lungs. There was a fair amount of edema of the brain. The brain weighed 1525 grams. It was injected and rather wet, on dissection yielding quite a good deal of fluid. Histologically my examination thus far concerns the general organ pathology. The changes present are those which one might expect to find in the body of a man of this patient's age,—a certain amount of atrophic nephritis, an enlarged prostate. He was for his years a pretty healthy man. I have not as yet studied microscopically the regions of the brain specifically interesting.

Aside from the affirmative histological evidence, animal inoculation is helpful in final diagnosis. It is the elimination of other possible causes of death that assists in arriving at the final determination in case of death from asphyxia, and that is true in the case of death from rabies. In both the blood is fluid in both there is acute passive congestion and terminal edema.

At the post-mortem parts of the brain notably segments from the Ammon's horn and cerebellum, were preserved, impressions were made of significant parts by Dr. Hinton, and Dr. Mallory removed the cervical spinal ganglia. I conserve these in instances of suspected rabies because in addition to the changes present in the Gasserian ganglia specific for rabies, the cervical spinal ganglia may show such changes and may contain the Negri bodies.

bed At about quarter to three I found the patient out of bed attempting to go downstairs, muttering to himself all the while When I got him back to bed he was fairly quiet, although he did not sleep At four o'clock he again attempted to get out of bed He was very talkative for the rest of the morning For three hours he kept calling for something which was at last understood to be coffee At sight of it he foamed at the mouth a little, but he drank it with no apparent difficulty and showed no reaction afterward

"That night at half past eleven he was making a peculiar noise and attempting to scale the wall He had a very glassy stare in his eyes and spat at every object in sight At three o'clock he had two drams of paraldehyde which gave the desired effect in about half an hour Then he slept with loud snoring and talking until ten minutes to six, when he had a dejection in bed followed by slight convulsions which lasted approximately twenty minutes I was in the next room and again heard the peculiar noise, similar to the barking of a dog I went to investigate and found the patient attempting to climb the wall, scratching his face with his nails, causing it to bleed He was frothing at the mouth and his breath came in gasps He still had the same glassy stare in his eyes that I had seen in the morning These actions lasted for about eight minutes I left the room to call the supervisor When I returned the patient had just fallen back on his pillow, apparently exhausted He turned very cyanotic immediately His respirations stopped for half a minute No pulse was obtainable We turned him on his side His forehead on one side was perfectly white and he had huge red blotches on his face He commenced to breathe very rapidly for about three minutes, then his breathing changed to long shallow respirations with absolutely no motion He was still cyanotic, but was blue and not black as previously He remained perfectly motionless with absent pulsation and set eyes for ten minutes, from 6:30 to 6:40, when he was discharged to Allen Street"

A lumbar puncture done three hours post mortem gave bloody fluid, sugar 31, chlorides 702 Centrifuged, clear yellow supernatant fluid Total protein 354

DISCUSSION

BY HENRY R. VIETS, M.D.,
GEORGE BURGESS VIAGRATH, M.D.,
AND WILLIAM A. HINTON, M.D.

DR VIETS The first symptoms were difficulty in swallowing and a feeling of constriction in his throat His physician felt that these symptoms might be due to hydrophobia and therefore inquired about bites from animals The animal was not a dog, as usual, but a cat The cat possibly had been bitten by a rabid dog and probably had rabies itself

The past history states that the patient "was never excitable"—an important point When he entered the hospital he had periods of great distress and he was highly excitable when provoked by the sight of water There had been a marked change in his personality, a symptom which was helpful in the diagnosis

The only important findings in the physical examination were the self-inflicted wounds around the throat and back of the neck, the obvious cyanosis when struggling, the horror and onset of paroxysmal seizures when he thought of or saw water, and the widely dilated pupils

I should like to ask Dr Cabot about the blood picture

DR CABOT It shows nothing but a slight leukocytosis

DR VIETS The spinal fluid was practically negative except for the three subarachnoid cells and the sugar content, which was a little increased above normal These findings I would not consider as significant Apparently he was able to swallow the barium with less difficulty than water and although he did not take very much, there was no spasm while it was passing through the pharynx and esophagus The barium meal test does not throw much light upon the situation and only indicates that the peristaltic waves were decreased, no definite spasm in the esophagus could be made out

There was apparently a little difference of opinion about the patient's ability to use his tongue

The nurse made some very careful observations, which are of a great deal of interest

The spinal fluid sugar, taken post mortem, was 31 mgms per 100 c.c., a normal count, as compared with 116 mgms before death There is no explanation, so far as I know, for the first high sugar content of the spinal fluid The total protein was ten times normal—354 mgms per 100 c.c., due to the bloody fluid

The case does not admit of much differential diagnosis Obviously the chief symptom was an acute attack of true "hydrophobia", that is, difficulty in swallowing, with the horror and spasm that go with it One would have to consider, possibly, two other diseases in a differential diagnosis (1) pseudo-rabies (really hysteria)—much more common when there is a good deal of rabies in the country and somewhat more common, I think, in young people, with this old man, who had been a quiet, easy-going citizen, it should hardly be given more than momentary consideration It is only fair to state, however, that I think any of us seeing a man, as this man apparently was, quiet, calm, answering questions fairly normally, but who was thrown into a violent spasm by the sight of water or a puff of air blown in his face, might have felt for a time that this patient had a functional nervous disease, hysteria The other disease in the differential diagnosis is (2) cephalic tetanus, usually due to wounds near the face, in

which there is spasm of the larvnx and the jaw. In this disease, however, there is a true spasm, with some permanent rigidity. This patient was quiet and free from his spasm except when provoked by water. There was also no suggestion of a wound and the onset was too sudden for tetanus. The patient was taken ill and died within three days, which would be unusual in tetanus.

We know that the diagnosis of rabies was confirmed in this case by the finding of Negri bodies such as have been found in practically all human cases and in all cases of animals since 1903, when Negri described the so called Negri bodies in the brain. I have looked up the cases that we have had in the Massachusetts General Hospital since 1878, and later I will say a word about the diagnosis and frequency of hydrophobia.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Rabies

ANATOMIC DIAGNOSIS

Jaundice slight
Hemorrhage focal subcutaneous of the face, bilateral
Erosion, scratches and abrasions of the skin of the back, shoulders, upper arm fore arm, right
Cicatrices of the hand left
Needle marks of the cubital spaces and of the lumbar region
Passive congestion of the pia mater and of the brain
Edema of the brain
Synechiae of the pleura, right
Sclerosis, focal, slight, of the curtains of the mitral valve and of the cusps of the aortic valve
Dilatation, slight, of the heart (valve openings)
Endarteritis chronic focal slight, of the coronary arteries
Passive congestion of the lungs spleen, liver
Hemorrhage perivascular submucous, of the stomach, slight
Chronic nephritis (atrophic form)
Cyst of the kidney, right
Hypertrophy of the prostate with "third lobe" formation
Dilatation, slight, of the aorta
Endaortitis, chronic, focal, slight

HISTOLOGIC DIAGNOSIS

Rabies Confirmed by animal inoculation

DR. GEORGE BURGESS MAGRATH The death of this patient is the fourth from rabies which I have been called on to investigate in twenty years. Jurisdiction I take in death from rabies as in death from tetanus, anthrax, and septiciemias in general when due to traumatism, on the

ground that they are supposably due to injury. Therefore this death was duly reported by the hospital early in the morning, and the post-mortem was made about eight hours after death. I was very glad to have as my guests Dr. Mallory and some of the staff and Dr. W. A. Hinton, Assistant Director of Biologic Laboratories in the Commonwealth. He is the official diagnostician for the Commonwealth in the matter of suspected rabies in animals, and in three of the four deaths which I have investigated in Massachusetts he has cooperated with me in the matter of diagnosis.

The pathological anatomy is disposed of in very few words. There was post-mortem a slight jaundice of the sclerae and a distinct yellowish tinge of the skin. There were present on the sides of the face and neck subcutaneous hemorrhages. There were erosions, scratches, abrasions of the skin of the back, shoulders and right upper extremity. There were some small scars of the left hand which I do not believe were due to the injury received, which was described as of the right thumb.

Internally this examination was similar to the examinations of the bodies of the three other men who died from rabies. It brought to light nothing that is pathognomonic of rabies. The conditions which are common to all are essentially general ones. There is generally acute passive congestion in this case exhibited chiefly in the brain and to some extent in the spleen and liver not so much in the lungs. There was a fair amount of edema of the brain. The brain weighed 1525 grams, it was injected and rather wet on dissection yielding quite a good deal of fluid. Histologically my examination thus far concerns the general organ pathology. The changes present are those which one might expect to find in the body of a man of this patient's age,—a certain amount of atrophic nephritis, an enlarged prostate. He was for his years a pretty healthy man. I have not as yet studied microscopically the regions of the brain specifically interesting.

Aside from the affirmative histological evidence, animal inoculation is helpful in final diagnosis. It is the elimination of other possible causes of death that assists in arriving at the final determination in case of death from asphyxia, and that is true in the case of death from rabies. In both the blood is fluid in both there is acute passive congestion and terminal edema.

At the post-mortem parts of the brain notably segments from the Ammon's horn and cerebellum, were preserved. Impressions were made of significant parts by Dr. Hinton, and Dr. Mallory removed the cervical spinal ganglia. I conserve these in instances of suspected rabies because in addition to the changes present in the Gasserian ganglia specific for rabies the cervical spinal ganglia may show such changes and may contain the Negri bodies.

The conditions present in this case were comparable in all respects with those met with in three post-mortem examinations made by me in 1914, 1921, and 1922. In the case of the other three a fairly definite incubation period of eight weeks appeared in the history, and death took place in about three days—hardly more than that—after the onset of symptoms. In the first instance the injury was dog bite of the hand. The dog was shot, but its body was destroyed without being submitted for diagnosis. In the second instance a rather tragic one, a man was jumped at by a stray dog, his face slightly scratched, his lip bruised on his own teeth, and he died very abruptly five months afterwards, being received in the hospital after about forty-eight hours of manic excitement. The cell changes present were of the same sort as those in this case, of which Dr. Hinton will speak.

In the third case the incubation period was of nearly six months' duration. The patient in that instance, a policeman, was badly bitten while trying to separate a dog proved rabid from some children. He received treatment very promptly. He was bitten on the third of August. He had three injections the next day and several in the next three or four days, and daily from the tenth of August to the end of the month. There was every reason to suppose that his case was under control. He went to a hospital for treatment of some acute thing—nephritis or something of the sort,—and while there became excited, and was taken to the Psychopathic Hospital, where he died. In his case a positive diagnosis of rabies was made by Dr. Hinton from histological observations and animal inoculation.

DR. LINCOLN DAVIS Did he have Pasteur treatment?

DR. MAGRATH He did. The material used at that time came daily from a commercial house in New York,—came on daily packed in ice. I feel sure that for some reason the material in this case was inert. I have no other explanation to offer. The delay, the rather prolonged incubation period, I think gave everyone the idea that he was going to get well. But it came out of a clear sky, and he died within two or three days of the onset of symptoms, with the same post-mortem changes.

DR. CABOT As to these self-inflicted wounds, have you known of them in other cases?

DR. MAGRATH No, the other three were without such. There must have been a great deal of thrashing about in the last case. I do not know any reason for it.

DR. HENRY H. FAXON The family had noticed that there was apparently an itching of the skin complained of even before he came to the hospital.

DR. CABOT Did he have that itching before he was bitten?

DR. FAXON No, sir, not so far as we know.
DR. WILLIAM A. HINTON The only thing I have to say is that the diagnosis was relatively easy and rapidly accomplished in our human cases. It consisted simply of making impressions of the Ammon's horns and the cerebellum and staining them by the appropriate methods. This is a matter of choice. In the three cases under discussion and in two other human cases where the material has been sent to us it was very easy. The last case presented a little more difficulty because some of the Negri bodies were slightly atypical in some of the impressions.

Apart from the immediate diagnosis we always attempt to confirm this by examination of the sections which are fixed in Zenker's fluid and stained by the eosin methylene blue method. The four cases which Dr. Magrath has sent us have differed from the dog cases and the other animals, like cows and horses, in that the ganglia have shown no changes whatsoever except in this case, where there were slight changes,—namely, proliferation of the capsules about the large ganglion cells. This is the best method to use in diagnosing rabies in domestic animals. About seventy per cent will show positive impressions on sections and the other thirty per cent are found by examining the ganglia. I rather suspect that these ganglia changes are not found in the human cases because the individual is bitten higher up, for we very seldom find any changes in the case of a rabbit used as a test animal, but we do find numerous Negri bodies. A characteristic feature of the Negri bodies is marked variation in size with a tendency to the occurrence of large bodies, which is in marked contrast to what we find in the rabbit, where the Negri bodies are very small.

In Dr. Magrath's four cases animal inoculation was positive. Two rabbits were inoculated in each instance. In the last case the rabbits died nineteen and twenty-one days, respectively, after inoculation, and showed characteristic Negri bodies. A rabbit may be absolutely well on a given day and the next day it will be found dead without any paralysis or other visible symptoms. One day the rabbit is apparently normal and the next day it will be found dead with numerous Negri bodies in its brain.

DR. CABOT Dr. Viets, can you add anything on the clinical side?

DR. VIETS I looked up the records of the hospital and they give us some interesting facts in regard to this disease. We have had, including this case, eight cases of hydrophobia in the Massachusetts General Hospital since about 1870. All have been men. The last case before this one was in 1891, thirty-six years ago. Between 1878, when the first case entered this hospital, and 1891, there were seven cases, varying in age from 17 to 73. The longest duration of any one case in the hospital was four days before death, the shortest, one day. All

HYDROPHOBIA AT THE MASSACHUSETTS GENERAL HOSPITAL

1878 1927

Case No	Name	Age	Sex	Entered	Died	Duration hospital	Duration, total	Initial infection	Location
1	C.H.A.	54	Male	1/23/1878	1/24	1 day	4 days	8 mos Dog?	?
2	I.W.N.	66	Male	9/ 9/1878	9/11	2 days	3 days	7 wks Cat	Thumb
3	W.R.	17	Male	4/24/1879	4/28	4 days	7 days	5 wks Injury	Finger
4	G.K.	17	Male	10/ 7/1889	10/ 8	1 day	4 days	3 mos Dog	Hand
5	W.J.M.	35	Male	4/ 9/1890	4/ 9	1 day	5 days	3 wks Dog	?
6	W.H.D.	27	Male	2/24/1891	2/25	1 day	2 days	8 wks Dog	?
7	A.C.	73	Male	3/18/1891	3/20	2 days	3 days	6 wks Dog	Hand
8		75	Male	10/ 5/1927	10/ 7	2 days	4 days	6 mos Cat	?

the cases were fatal. The total duration of symptoms in all was less than a week, the longest being seven days and the shortest two days. The initial infection in the eight cases was in five, dog bite, in one, cat bite, in one, a question of dog bite, and in one, an injury to the hand from a machine, with no animal inoculation known. These figures emphasized also the extraordinary rapidity of the symptoms in cases of hydrophobia. Death occurs within a week after the beginning of the difficulty in swallowing. If we carefully examine, however, the history of some cases, as I did in a case in 1923 we find that premonitory symptoms may precede the difficulty in swallowing for a period of weeks or even months. In my case, a man bitten in January 1923 by his dog did not die until September, over seven months later. At least four months before his death, nevertheless, he began to have symptoms of hyperexcitability, difficulty in controlling himself, and under certain circumstances a great sense of discomfort at a sudden noise or shock of any kind. Blowing air on his face caused him extreme discomfort even three or four months before he died. Negri bodies were found in the brain at post mortem and a picture of them will be found with a report of the case in the *Archives of Neurology and Psychiatry* for June, 1926.

The human cases pass through the stages so well described by Gowers, who wrote a description of this disease, which will be found in his Textbook for 1888. His description, in my opinion, has never been surpassed. Some patients have three definite stages: (1) the premonitory symptoms, (2) the furious stage, and (3) a paralytic stage. In the case presented to-day the patient was at times excited, with quiet periods intervening, and towards his end he was much more quiet, although he did not develop the typical paralysis seen in some of the cases recorded in the hospital here.

DR CABOT: Have you any record of self-inflicted wounds?

DR VIETS: In the seven cases mentioned one patient "clutched his throat", none caused wounds. The spitting is a very characteristic symptom, described at great length by the house officers in the old records. Delusions of persecution may be present. The patient I saw in 1923 felt, an hour or two before he died, that

his wife was unfaithful to him. He also had a horror of all the attendants who looked out for him.

Another point of interest is that almost no drugs have any control over the mania or over the spasms. All the ordinary drugs such as hyoscin, bromides, and paraldehyde give no relief. Heavy doses of morphia are, of course, effective. Occasionally patients with hydrophobia can be fed by approaching them from behind so that they will not see the water or food to be given them.

DR HINTON: I was going to ask whether the fear is an intellectual one. Do they fear water as such?

DR VIETS: The patients say that the difficulty is that when they attempt to swallow water the spasm is extremely painful, so they have a horror of the pain of swallowing. This was also the view expressed by Horslev.

DR EDGAR M. NEPTUNE: It is interesting in this case that the man could take solids quite well but could not take water.

DR VIETS: That has been pointed out many times and it is difficult to explain. Of course, cold water may have something to do with it. These patients all object to cold things. Coffee for instance, this man was able to take without much difficulty. One case in the hospital, years ago, was treated by injections into the arm of saline solution, and a little was spilled on the arm, the shock was uncomfortable and at once threw the man into a spasm.

The question of how these patients are infected is interesting. There have been many descriptions of bizarre cases in the literature. One of the most interesting cases, but tragic, was a man who had tied up a mad dog with a rope. He went to untie the dog, tried to untie the knot with his hands, could not do it, took the knot in his mouth, and contracted rabies. Many people have been infected by animals licking their hands, probably with an abrasion of the skin that they did not realize they had.

DR YOUNG: Has the organism ever been cultivated?

DR VIETS: Not definitely, there is a feeling among bacteriologists that the Negri bodies are probably a stage of an infective organism and from the Pasteur Institute in Paris reports have recently been issued intimating that the Negri

body, as we see it in the infected brain, is a spore state of the organism

DR YOUNG Has any work been done on the saliva?

DR VIETS In human beings as well as dogs, it is highly infective

DR LINCOLN DAVIS This man was under the care of the East Surgical Service in consultation with the Neurological Service and others I saw him once,—the first case of rabies I ever saw I have been connected with this hospital since 1898 practically continuously, and I have I think seen almost every interesting case That is one good thing about this hospital, that we have a chance to see every interesting case This was the most dramatic and terrible case that I have ever seen Dr Porter and I went into his room. The man seemed quite normal and talked perfectly rationally Then we asked the nurse to give him a drink of water As she approached with the water his respiration became very rapid, his chest heaved, his pupils dilated, and yet he was willing to make the attempt He took the water in his hand, his hand began to shake and the water to spill He finally got it up to his mouth, then pushed the glass away from him and began to clap his hands Dr Porter and I both did the same I turned to Dr Porter and said, "That seems almost like play-acting I cannot understand why he should clap afterwards" I felt some doubt as to whether it was the real thing But some of the gentlemen who came down to see him stayed there for hours—I think Dr Moss stayed six hours—and these convulsions got worse and worse He did it a good many times I don't believe anybody who saw him will ever forget it

I think we should add that as a result of this case three of our surgical house officers are now taking the Pasteur treatment Two found abrasions on their hands after taking care of this man The other got some of the saliva in his eye Perhaps they will be able to say something about the rigors of the Pasteur treatment They have kept at their work and been very cheerful I cannot see any change in their dispositions

DR FAXON I want to say something about the treatment Apparently the serum from the Pasteur branch in New York is as reliable as any that can be obtained It was used in treating the house officers here We got it from what seemed to be the best source There were fourteen injections of two cubic centimeters each of the four per cent suspension of prepared rabbit's cord All the doses are the same, and supposed to be taken subcutaneously on successive days, and the instructions are to vary the site and not to put the inoculations too close together One man got a slight malaise from the first injection Aside from the fact that the injected areas became rather sore, rather itchy, and the lymph glands got enlarged and tender

no ill effects were experienced But the interesting thing to me is the fact that it really is a very simple thing and does not incapacitate the person taking it at all No one should be deterred from taking the treatment It does not amount to anything more than getting injections

I looked up all the cases too It is rather interesting to note that there were I think five of the eight cases where some record of the eye and pupils was kept I think I am correct in saying that in all the cases dilatation of the pupils was noted In the case we had the pupils were dilated and there was inequality

According to the statement sent out with the rabies serum, apparently the time for immunity to develop is five weeks, including the two weeks' inoculation Fifteen per cent of people bitten by rabid animals will get the disease A great point is made of cauterizing the wound with fuming nitric acid at once The mortality is cut down to considerably less than one per cent if immunizing treatment is started early and carried out properly

UNITED STATES PUBLIC HEALTH SERVICE

CHRONOLOGICAL LIST OF CHANGES OF DUTIES AND STATIONS OF COMMISSIONED AND OTHER OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

FEBRUARY 1, 1928

Sanitary Engineer Leslie G Frank Directed to proceed from Montgomery, Ala to Washington, D C and return, in connection with milk investigations January 24, 1928

Assistant Surgeon General Thomas Parran, Jr Directed to proceed from Washington, D C to Hot Springs, Ark, and return in connection with venereal disease control measures January 25, 1928

Surgeon W A Korn Directed to assume charge of all Service activities at Port Angeles, Washington effective February 15, in connection with quarantine and immigration at that port January 26 1928

Associate Sanitary Engineer E C Sullivan Directed to proceed from New York, N Y, to Washington D C, and return for the purpose of conferring with officials at the Bureau concerning the enforcement of the Interstate Quarantine Regulations and allied sanitary engineering matters January 28 1928

Surgeon Joseph Goldberger Directed to proceed from Washington, D C to Milledgeville, Ga and return in connection with nutrition studies January 28 1928

Surgeon G W McCoy Directed to proceed from Washington D C, to Baltimore Md, and return in connection with studies on scarlet fever and diphtheria January 30, 1928

BOARDS CONVENED

Board of medical officers convened to meet at U S Public Health Service Relief Station No 339, Washington D C at 2 p m February 6 1928 to determine physical eligibility of officer of Coast Guard for promotion

Detail for the Board

Surgeon G L Collins

Surgeon J P Leake

APPOINTMENTS

Maurice A Roe appointed and commissioned in the grade of Assistant Surgeon effective date of oath
H S CUMMINS, Surgeon General

The New England

Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY
under the jurisdiction of the following named committee

For Three Years

JOHN W. BARTOL M.D. FREDERICK T. LORD M.D.
CHANNING FROTHINGHAM M.D.

For Two Years

HOMER GAGE, M.D. Chairman EDWARD C. STEFFTER M.D.
EDWARD W. TAYLOR M.D.

For One Year

WILLIAM H. ROBERT JR. M.D. ROGER I. IFT M.D.
ROBERT B. OSGOOD M.D.

EDITORIAL STAFF

DAVID L. EDSELL, M.D. STEPHEN R. SHIMOFF M.D.
RICH HENT M.D. HANS ZINSEEL M.D.
JOHN P. SUTHERLAND M.D. BENJAMIN WHITE, PH.D.
GEORGE R. MINOT M.D. HENRY R. VETS M.D.
FRANK H. LAHEY M.D. ROBERT N. NEE M.D.
SHIELDS WARREN M.D.

WALTER P. BOWERS M.D. Managing Editor

ASSOCIATE EDITORS

GILBERT G. SMITH M.D. WILLIAM B. BEFED M.D.
JOSEPH GARLAND M.D.

THE NEW HAMPSHIRE MEDICAL SOCIETY

PUBLICATION COMMITTEE

D. E. SULLIVAN M.D. EMMETT M. FITCH M.D.
JOSEPH J. CORRI M.D.

THE VERMONT STATE MEDICAL SOCIETY

PUBLICATION COMMITTEE

WILLIAM G. RICKES M.D. C. F. DALTON M.D.
J. A. WARR M.D.

SUBSCRIPTION TERMS \$6.00 per year in advance postage paid
for the United States Canada \$7.00 per year \$6.00 per year
for all foreign countries belonging to the Postal Union

Material for early publication should be received not later
than noon on Saturday. Orders for reprints must be sent to
the Journal after 126 Massachusetts Avenue

The Journal does not hold itself responsible for statements
made by any contributor

Communications should be addressed to The New England
Journal of Medicine 126 Massachusetts Avenue Boston, Mass.

PROCRASTINATION IN DEALING WITH DIPHTHERIA

In this number of the JOURNAL Lane and Forsbeck present a report of Diphtheria Deaths in Massachusetts

Leading up to the record of deaths in this Commonwealth in 1926 the report of the diminishing incidence of diphtheria in the four year period preceding and including 1926 is encouraging but not wholly reassuring because this lowered morbidity rate is not altogether due to the employment of prophylactic measures since it is recorded in communities which have not used toxin-antitoxin as well as in those in which immunizing treatment has been more general

In diphtheria variations in frequency and virulence have been recorded in some years. This is an experience common in dealing with other diseases

Although public health authorities are agreed that in toxin-antitoxin there has been found a potent weapon in the contest against diphtheria

other factors are of influence in a lowered morbidity and mortality rate

Some writers believe that tuberculosis, for example, is less general than formerly because of more common immunity or resistance to the invasion of the bacillus. There may be seasons affecting the prevalence or virulence of the Klebs-Loeffler bacillus or there may be larger numbers of persons who through mild unrecognized infection have established immunity. Even if the human family is gradually breeding a race which will in time naturally antagonize diphtheria, it is certainly too early to be complacent. In all probability we are passing through a period in which the disease is less general and perhaps less virulent, but like smallpox may break out in malignant form if conditions favor, for like smallpox the disasters attending diphtheria may be comparable with the destructive force of a smoldering fire

This report is especially instructive in its record of deaths and the relation of medical service to the victims

It is astonishing that of 249 deaths eight had no physician in attendance and disappointing that there seems to be a disposition to delay the administration of antitoxin until a positive report is received and to give small doses

Antitoxin is as much a specific in treating diphtheria as is quinine malaria and if physicians cannot use it intelligently there will come a time when public health authorities will see to it that the work of the attending physician is supervised. That means a feature of State Medicine which is one of the great clouds spreading its gloom over the practicing physician

Here as in many fields of practice the safeguarding of the functions of the practitioner lies in his ability to use recognized therapeutic and prophylactic measures effectively

This report should be read carefully and reread by every physician who holds himself ready to treat diphtheria

GENERAL EDUCATION AND MEDICINE

The proposition that higher average intelligence will lead to more general endorsement of scientific medicine seems to be logical. The fact that intellectual development may not always bring about the broadest wisdom is not a sound argument against the advantages of the best possible education of the masses even though the inability to apply correct reasoning to a grave problem is fairly common among those who have profited by the teaching methods recognized as adapted to promoting the development of the human mind by pedagogies

As medicine is concerned in methods employed to promote the good of humanity, its exponents should and generally do feel a definite interest in our schools and often accept responsible positions on boards of education

The conditions existing in the public schools of Boston as compared with other cities similar in size are encouraging as set forth by the Boston Chamber of Commerce in a study by Dr Ayers, the noted statistician, who shows that those cities spending the most money for education have the best schools. Modern education covers the dissemination of knowledge with respect to health as well as mental development. Retention in school over the longest possible time means the moral and physical protection of the child, for if the child leaves school under sixteen he is more subject to the dangers and temptations of conditions found in the complex life of the city. Boston holds its children in school longer and in larger numbers than formerly and compares favorably with other cities. During the last ten years the attendance in Boston high schools has increased sixty per cent and a similar increase is found in trade schools.

Statistics show that in Cleveland the attendance in high schools in 1925 was 13,144, in St. Louis 11,305, in Baltimore 7,337, and in Boston 21,354. Although Philadelphia has a population twice as large as Boston the enrollment in her high schools was only one third greater.

An especial feature of interest in the quality of instructions in Boston Public Schools is found in the relative standing of graduates who apply for entrance to colleges as compared with those fitted by private preparatory schools. Both Harvard and Yale report that the intelligence tests show a higher percentage of graduates of the public schools although the cost of educating students in the preparatory is much in excess of that in the public schools.

Physicians and all others interested in better health and average intelligence of future citizens may use all reasonable effort to keep our public schools up to the highest possible degree of efficiency.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

OSGOOD, ROBERT B. A B, M D Harvard 1899, F A C S Formerly Chief of Orthopaedic Service Massachusetts General Hospital, Chief of Orthopaedic Service Children's Hospital. John B. and Buckminster Brown Professor of Orthopaedic Surgery, Harvard Medical School, President New England Surgical Society, formerly President American Orthopaedic Association. Address 372 Marlborough Street, Boston. Associated with him is

LUND, CHARLES C. M D Harvard 1920. Instructor in Surgery, Harvard Medical School, Assistant in Surgery, Boston City Hospital, Surgeon to Out-Patients, Collis P. Huntington Memorial Hospital, Visiting Surgeon, Long Island Hospital. Address 527 Beacon Street,

Boston. They write on "Fractures of the Odon-toid Process" Page 61

LANE, EDWARD A. A B, C P H, M D Cornell 1916. District Health Officer Metropolitan District, Massachusetts Department of Public Health, Assistant in Public Health Administration, Harvard School of Public Health. Address 546 State House, Boston. Associated with him is

FORSBECK, FILIP C. B S, M S, M D Rush 1925. Epidemiologist, Massachusetts Department of Public Health. Address 546 State House, Boston. They write on "Diphtheria Deaths in Massachusetts, 1926" Page 73

RHOADS, C P. A B, M D Harvard 1924. Surgical House Officer, Peter Bent Brigham Hospital, Instructor in Pathology, Harvard Medical School, Research Assistant in Pathology, Boston City Hospital, Trudeau Foundation Fellow. His subject is "The Reticulo-Endothelial System—A General Review" Page 76. Address Pathological Laboratory, Boston City Hospital.

DAVIDOFF, REUBEN B. B S, M D Columbia University, 1922. Surgeon Out-Patient, Beth Israel Hospital, Assistant in Surgery, Boston City Hospital, Assistant in Surgery, Tufts Medical School. His subject is "A New Traction Finger Splint" Page 79. Address 483 Beacon Street, Boston.

FOSTER, GEORGE S. M D Tufts College Medical School 1906. Surgeon to the Lucy Hastings Hospital, Manchester, N. H. His subject is "Uterine Malpositions" Page 81. Address 967 Elm St., Manchester, N. H.

EMERSON, GEORGE S. M D Baltimore Medical College 1897. Member of the New Hampshire Medical Society. His subject is "The Physician of the Future" Page 89. Address Fitzwilliam, N. H.

DR ELLIOTT C CUTLER WILL ADDRESS THE STAFF MEETING OF THE MASSACHUSETTS GENERAL HOSPITAL

ON Thursday evening, March 8, Dr Elliott C. Cutler will address the Staff Meeting of the Massachusetts General Hospital on "The Experimental Production of Abscess of the Lung."

His work may be expected to have a bearing on the important question of the origin of post-operative pulmonary complications in which he has long been interested clinically and experimentally. He is among those who have upheld their origin in the majority of cases by embolism from the field of operation, while others have maintained that they arise chiefly by the aspiration of infected material.

Dr Cutler is a graduate of the Harvard Medical School, served as House Officer at the Peter

Bent Brigham Hospital and as Resident Surgeon at the Massachusetts General Hospital. He is now Professor of Surgery in Western Reserve University School of Medicine and Chief Surgeon, Lakeside Hospital, Cleveland, Ohio

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY
Foster S Kellogg, M.D. Frederick L Good, M.D.
Chairman Secretary
Frederick J Lynch, M.D., Clerk

Why Do An Episiotomy?

There are two main reasons for doing an episiotomy the first, to avoid extensive irregular tears of the perineum, and the second, to overcome the resistance of a rigid perineum, thereby favoring normal instead of forceps delivery in many instances. One of the most distressing sequelae of labor is a tear of the perineum through the sphincter ani and anterior rectal wall. An episiotomy performed at the proper time will prevent this laceration in almost every instance. Again, in irregular tears not involving the sphincter, the repair, because of ragged edges, is never as satisfactory as the repair of a straight incision.

Two types of episiotomies are in use, first the median which is also referred to as perineotomy, and second the lateral. The advocates of the lateral method object to the median on the grounds that if the incision is extended by the advancing head it may go through the sphincter ani. This, however, is not a sound reason as this accident may be avoided by operatively extending the incision in such a way that it encircles the anus on one side, thus saving the sphincter. As a general principle, it is probably better to employ a lateral incision when considerable room is required and a median when the opposite obtains. The lateral episiotomy is best done on the side the occiput points, in other words, a right episiotomy in a right position and a left episiotomy in a left position. Very rarely is it necessary to make an incision on the two sides. Incisions of the perineum are generally performed on primiparae although they are sometimes necessary in multiparae. A multipara who has had an episiotomy with her first labor comes to a second delivery with her external genitals resembling those of a primipara and therefore it may be expedient to again incise the perineum at this delivery. The same applies to a multipara who has had an extensive repair of laceration of the perineum with a previous labor.

EPISIOTOMY VS DILATATION OF THE PERINEUM

Those who favor manual dilatation of the perineum and vagina before delivery state that this procedure obviates the performance of

perineal incisions. This method of dilatation has recently been advocated under the name of "ironing the perineum." While this procedure will overcome a resistant perineum, it not infrequently results in the separation of the levator ani muscles under the intact mucous membrane and skin. As a result of this a rectocele may soon appear. This condition practically never occurs after well sutured perineal incisions.

TECHNIQUE OF REPAIR

The upper angle of the wound should be exposed. This is readily accomplished by the use of a self retaining perineal retractor, the Gelpi and Bland models being excellent instruments for this purpose. The vaginal mucosa and fascia are sutured with interrupted sutures of chromic catgut. The levator ani muscles, covered by their fascia, are approximated with like sutures. The superficial tissues are closed with fine chromic catgut. The skin edges are united by a subcuticular suture of fine catgut. Some operators prefer the use of silkworm gut sutures in the external perineum. Since the sphincter and rectum are not involved in the wound it usually heals cleanly. Clean healing is more difficult to secure when repairing a tear involving the sphincter ani and bowel. Under normal conditions the incision is generally completely healed by the time the patient is allowed out of bed, so that her lying-in period is not prolonged because of this operative procedure.

Questions of a similar nature to the above will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

BOSTON MEDICAL LIBRARY NOTES ON LITERATURE AND RARE BOOKS

THAT it is not necessary to abandon practice and seclude oneself in a laboratory in order to satisfy the desire to make some contribution to the science or the art of medicine any more than it is necessary to immure oneself within the four walls of a monastery or nunnery in order to serve one's Maker, is well seen if one follows the clinical investigations of Dr Joseph Capps of Chicago, who has been studying the distribution and character of pain brought out by irritation with a blunt instrument in various localities within the pleural, peritoneal, or pericardial cavities. These studies were, of course, made upon human subjects when they were alive and not anaesthetized, except for a local anaesthesia to the skin. He shows very clearly that the somatic and parietal pleura are supplied from two different sets of nerves and that when the portion innervated by the intercostal branches is irritated by a blunt probe, passed through a

canula into the pleural cavity, the skin supplied by that intercostal branch is the seat of pain but when that portion supplied by the phrenic nerve is similarly irritated pain is referred to the top of the shoulder and not at all to the skin on the chest

In the case of the peritoneum it was more difficult to get the intestines out of the way so that the same method of investigation could be carried out, but a method was found after introducing a gas into the peritoneal cavity on which the intestines were floated up together with assistance from the fluoroscope by which it was possible to obtain results of the same general character. And so in the pericardium it was possible to demonstrate the peripheral reference of pain, just as in the pleura, when the region touched was at the reflexion of the pericardium and pleura over to the dome of the diaphragm where the nerve supply was phrenic and the reference of pain was accordingly again to the shoulder. These observations, important in themselves, open up the possibilities of carrying on still further with studies of this sort, thus materially contributing to diagnostic skill and an evaluation of symptoms now little understood.

A Philadelphia surgeon, Dr. Carnett,* has been stressing the importance of the intercostal reference of pain to the abdomen when the lesions were really in the course of these nerves, the lower five or six of which furnish the skin of the abdomen with sensory fibres. He feels he is able by abdominal palpation directed to the deeper structures of the abdomen to discriminate between pain of intraperitoneal origin and that of intercostal origin. At the Massachusetts General Hospital similar investigations are being carried out with a view to determining the exact location of pain derived from oesophageal, duodenal, and upper intestinal lesions as indicated by its reference to localities remote from the seat of these lesions.

The literature on this subject will be exhibited in Holmes Hall at the Boston Medical Library during the week of March 5th.

The Library has been the recipient of a gift of very great interest and value, a first edition of Galvani's work on animal Electricity published in 1792. This may also be seen at this time.

The work is entitled *De Viribus Electricitatis in Motu Musculari*, and was published in Modena only six years before the author's death. Luigi (Aloisio) Galvani was born in Bologna, September 9, 1737, and died in the city of his birth, December 4, 1798. He was Docent and then Professor of Medicine at Bologna and also held a Chair in Anatomy. It was while studying muscles that he observed that muscle preparations from frogs' legs when hung on copper hooks coming in contact with an iron balustrade

contractions were developed in these muscles. It was this observation that revealed to physicists the unthought of powers of electricity and to physiologists the equally undreamed of electric manifestations in living tissue. Even before this time 1791, Galvani had been experimenting with living tissues as affected by electrical discharges from Leyden jars. Volta took exception to the interpretation placed by Galvani upon his investigations and the discussion provoked a heated argument between those who thought it proved the existence of animal electricity (Galvani) and those who regarded it as proof that electricity was generated by the contact of dissimilar metals (Volta). This work is in Latin and is bound up with dissertations on the same subject by Aldine and Carminati, in Italian. The printing and paper are excellent and in perfect preservation. The illustrations in the back of the volume are very instructive as showing how experimental work was conducted at that time.

Walsh had observed animal electricity in the Torpedo (1773) and John Hunter had noticed the same thing in other electric fishes. Galvani's work however on the electric properties of excited animal tissues really started the modern work on this subject. At this time all nerves in the body were supposed to originate in the brain and this discovery of Galvani's did not influence physiological research very much at that time. In the meantime, however, men were employing electricity in the treatment of disease and static machines were installed in St. Thomas' Hospital (1799), St. Bartholomew's 1777, and Middlesex Hospital in 1767. There is an old print of the date of 1799 hanging on the wall of St. Bartholomew's, in which a patient is figured being treated by static electricity.

MISCELLANY

SMOKE ABATEMENT RECOMMENDATIONS OF THE DEPARTMENT OF PUBLIC UTILITIES SUBMITTED TO THE 1928 SESSION OF THE GENERAL COURT

In compliance with Chapter 45 of the Resolves of 1927 the Department of Public Utilities of the Commonwealth has submitted a report on smoke abatement which will be considered in the 1928 session of the General Court.

At present there is a smoke abatement law (Chapter 651 Acts 1910) which governs Boston, Brookline, Cambridge, Chelsea, Somerville and Everett. It is enforced by the Smoke Abatement Division of the Department of Public Utilities.

The changes proposed in this law are as follows:

1. A uniform standard of emission. For all stationary and marine stacks smoke of a density equal to or greater than No. 2 of the Ringelmann Chart (40% black) would not be permitted for more than 6 minutes in one hour except that during the 6 minutes a density equal to No. 3 (60% black) or greater might be discharged for two minutes.

Note The present grading of stacks according to size and special standards for each grade would be eliminated by this proposal with the exception of provisions relating to locomotives which are left unchanged

The proposed standard is slightly more lenient than those in the present law for stationary stacks up to 5 feet in diameter, and is stricter for stationary stacks of larger diameters and for marine stacks (See attached table)

- 2 An enlargement of the smoke abatement area governed by the 1910 act to include Metropolitan Boston

Note The cities and towns which would be added are Arlington Belmont, Braintree Canton Dedham Lynn Malden Medford Melrose Milton Needham Newton Quincy Revere Saugus Stoneham Wakefield Waltham Watertown Winchester Winthrop, Woburn and Weymouth

- 3 Increase in penalties for violations to a maximum fine of \$500 or imprisonment for not more than 3 months or both

Note The penalty under the present law is \$10 to \$50 for the first offence and \$20 to \$100 for every succeeding offence

- 4 A new provision that individuals owning property located within one half mile of the source

of smoke may bring proceedings in court, on their own initiative to have the violation of law restrained upon showing that they suffer personal or property damages thereby

There is also a general law on smoke abatement (Sections 132 to 136 inclusive of Chapter 140) which applies to other cities and towns of the Commonwealth provided that they accept its provisions. The Department also recommends three changes in this general law which are as follows

- 1 The same standard of emission as is recommended for the Boston law

Note Under the present General Law the emission of dark or dense gray smoke within a quarter mile of a dwelling for more than 5 continuous minutes or during 90 minutes of any continuous period of 12 hours is declared a nuisance unless authorized by annual permits issued by the city or town government.

- 2 The same penalties as are recommended for the Boston law

Note The present penalty is a fine of not more than \$100 for each week during any part of which the nuisance exists

- 3 The same new provision permitting court action by individual property owners as is recommended for the Boston law

THE PRESENT STANDARDS

Classification of Stacks and Maximum Permissible Densities and Duration of Emissions for Each Classification according to the Smoke Abatement Law for the City of Boston and Vicinity (Chapter 651 Acts 1910)

Classification of Stacks	Maximum Permissible Density of Smoke (2)	Permissible Duration in Any One Hour (3)
Stationary Stacks		
Class I. Up to 5 feet inside diameter (4)	40% black	6 minutes
Class II. Between 5 and 10 feet inside diameter	60% "	3 "
Class III. Over 10 feet inside diameter	40% "	25 " (5)
Stacks of Vessels		
Class IV. Up to 4 feet inside diameter	60% "	3 minutes
Class V. Over 4 feet inside diameter	60% "	5 "
Locomotive Stacks		
Class VI.	60% "	20 seconds in any one period of 5 minutes (6)

- (1) Temporary permits for emission of smoke in excess of the requirements of the law may be granted by the Department of Public Utilities for periods not exceeding six months if public convenience requires it
- (2) The emission of densities equal to or greater than those prescribed for periods longer than specified is prohibited
- (3) The number of minutes in any one hour need not be consecutive
- (4) The wording of the act is "having an inside area at the top not exceeding the area of a circle 5 feet in diameter"
- (5) During this time of 25 minutes smoke of 60% density may be emitted for 5 minutes
- (6) Locomotives moving trains of 6 or more cars may emit smoke for 30 seconds. Locomotives in and around roundhouses may emit smoke for 15 minutes when fires are being built

COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT
WITH 1927 AND SEVEN YEAR AVERAGE

WEEK ENDING FEBRUARY 4

	1928					1927			
	Wk. ending Jan. 14	Wk. ending Jan. 21	Wk. ending Jan. 28	Wk. ending Feb. 4	Average cases reported for week corresponding to Feb. 4 for past seven year	Wk. ending Jan 15	Wk. ending Jan. 22	Wk. ending Jan 29	Wk. ending Feb 5
Actinomycosis	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-
Botulism	-	-	-	-	-	-	-	-	-
Cerebrospinal Men	-	1	-	1	1	2	1	-	1
Chickenpox	152	97	105	136	97	136	122	113	139
Conjunctivitis Inf.	-	-	-	-	3	-	2	-	-
Diphtheria	44	27	46	42	63	31	38	29	35
Dysentery, Amoebic	-	-	-	-	-	-	-	-	-
Dysentery, Bacillary	-	-	-	-	-	-	-	-	-
Encephalitis, Epid.	-	1	1	2	1	-	-	1	-
Favus	-	1	-	-	-	-	-	-	-
German Measles	5	2	6	3	7	5	4	4	3
Hookworm Infection	-	-	-	-	-	-	-	-	-
Influenza	3	2	7	11	45	24	28	31	11
Leprosy	-	-	-	-	-	-	-	-	-
Malaria	-	-	1	-	-	-	-	-	-
Measles	142	139	164	265	248	17	49	48	60
Mumps	88	140	95	78	49	49	28	32	23
Paratyphoid Fever	1	1	-	1	-	-	-	1	1
Pneumonia (Broncho)	35	27	27	33	46*	34	52	26	38
Pneumonia (Lobar)	66	57	58	37	45	32	57	52	48
Poliomyelitis	-	1	1	2	-	-	-	1	1
Scarlet Fever	112	149	124	85	143	101	111	104	116
Septic Sore Throat	3	-	4	1	2	4	2	3	2
Smallpox	53	21	15	6	2	-	-	-	-
Tetanus	1	-	1	-	-	-	-	-	-
Trachoma	-	-	-	-	-	1	-	-	-
Trichinosis	-	-	-	-	-	-	-	-	-
Tuberculosis (Pul.)	20	21	63	22	34	31	25	30	30
Tuberculosis (o.f.)	1	2	7	6	2	2	4	6	3
Typhoid Fever	3	2	1	-	5	1	2	6	1
Typhus Fever	-	-	-	-	-	-	-	-	-
Whooping Cough	120	130	125	155	69	47	58	61	40
Gonorrhoea	93	20	37	38	18	63	11	21	12
Syphilis	59	18	75	42	27	27	21	30	10

*Average for three years. Made reportable January 1, 1925. Remarks
No cases of cholera, Asiatic, glanders, plague, rabies in humans and yellow
fever during the past seven years.

LEGISLATIVE NOTES

All the bills dealing with vaccination introduced into the Legislature this year have been withdrawn. No hearings were held and no new action is to be expected during this session.

HOUSE BILL 748

The Joint Judiciary Committee conducted a hearing on this bill Tuesday February 21.

This bill would if enacted practically destroy the provision in the present law which obliges plaintiffs to file action for malpractice suits within two years. The text is as follows:

An Act relative to the Limitation of Actions against Physicians and Others for Malpractice Error or Mistake

Section 1 Section four of chapter two hundred and sixty of the General Laws as amended by section one of chapter three hundred and nineteen of the acts of nineteen hundred and twenty-one is hereby further amended by inserting after the word accrues in the ninth line the words "or becomes known—so as to read as follows—Section 4 Actions for assault and battery false imprisonment slander actions against sheriffs deputy sheriffs constables or assignees in insolvency for the taking or conversion of personal property actions of tort for injuries to the person against counties cities and towns and actions of contract or tort for malpractice error or mistake against physicians surgeons dentists hospitals and sanitariums shall be commenced only within two years next after the cause of action accrues or becomes known and actions for libel shall be commenced only within one year next after the cause of action accrues.

Section 2 This act shall take effect upon its passage.

The bill was opposed by Dr J S Stone representing the Massachusetts Medical Society and the Massachusetts Homeopathic Medical Society Representative Hale of Springfield the officers of the State Dental Association the optometrists and Mr Homans an attorney who has been counsel for defendants in some cases Miss Johnson of the State Nurses Association and several physicians recorded oppositions.

HOUSE 707

The adverse report of the Committee on State Administration upon this bill to establish a Board of Registration of Osteopathy has been accepted by both House and Senate.

RECENT DEATHS

FOSTER—DR HORACE KENDALL FOSTER for a long time a prominent physician of Peabody died at his home in that city February 20 1928 aged 73. He was born in North Andover Dec 5 1854 a graduate of Dartmouth College in the class of 1879 and of Dartmouth Medical School three years later. Settling in Peabody he joined the State Medical Society and served it as Councilor for a long series of years. Dr Foster was medical examiner of the 8th Essex District and for 20 years president of the J B Thomas Hospital in Peabody also vice-president of the Warren Five Cents Savings Bank. He is survived by two sons and a daughter.

JOURNEY—DR WARREN WILLIAM JOURNEY of Boston a graduate of Tufts College Medical School in 1900 died suddenly while playing a game of billiards February 20 1928 from heart disease at the age of 62.

SAYLES—DR JOSEPH BORLAND SAYLES a Fellow of the Massachusetts Medical Society since the date of his graduation in medicine, died suddenly from heart disease at Taunton February 21, 1928, at the age of 62.

Dr Sayles was born in Somerset Mass February 28 1865, took an M D from Bellevue Hospital Medical College New York in 1888 and another from Dartmouth Medical School in the same year. He settled in practice in New Haven Conn, moved to West Newton Mass in 1895 to Dighton the following year and to Taunton in 1911. There he had practiced since devoting his attention largely to dermatology. He was a member of the New England Dermatological Society and a Fellow of the American Medical Association.

EDSON—DR. PTOLEMY O'MEARA EDSON a retired Fellow of the Massachusetts Medical Society, died at his home in Roxbury after a short illness with pneumonia February 13 1928 at the great age of 94.

He was born in Chester Vt on December 27 1833 was the son of Ptolemy and Susan (Pratt) Edson was prepared for college at Appleton Academy in New Ipswich N H and was graduated from the University of Vermont in 1857 and then attended the medical department of the university taking his M.D. in 1860. After his graduation he assisted his father in practice in and around Chester.

In Civil War days, Dr Edson served as assistant surgeon in the First Vermont Cavalry from November 1861 until March 1864 and in the latter year he became surgeon with the rank of major of the Seventeenth Vermont Infantry, serving as such until February 1865. Upon returning home from the war he resumed practice in his native place Chester but in 1866 moved to Roxbury where he since had made his home and continued his profession. He joined the State Medical Society in 1867 and was retired in 1904. He was a member of the Loyal Legion and had belonged to the G. A. R. and the Roxbury Society for Medical Improvement, the Norfolk District Medical Society Boston Obstetrical Society and the Boston Medical Library. He served many years on the Boston school committee. In his religious interests he was affiliated with the old First Unitarian Parish. For many years Dr Edson resided on Warren Street in Roxbury before removing to Elm Hill Avenue.

On October 30 1865 Dr Edson married Mary Augusta Young in Bangor Me. Mrs Edson died in 1922. Surviving Dr Edson are two sons and two daughters. The sons are Dr Carroll Everett Edson residing in Denver Col and John Wells Edson a resident of Dedham.

WOODCOCK—DR GALEN MURRAY WOODCOCK of Bangor Maine died in that city February 17, 1928 aged 75. He was a native of New York and was graduated at the New York University Medical College in 1873 at the age of 21. After practicing in New York and in South Brewer Maine he settled in Bangor in 1882. He was a Fellow of the American Medical Association and a member of the Maine Medical Association.

THE DEATH OF DR JOHANNES FEBIGER

Dr Johannes Febiger has recently died. He was an able pathologist and had devoted much time to research work in cancer having been the first to produce cancer experimentally with a definite agent according to the opinion of some writers.

He was Professor of Pathological Anatomy in the University of Copenhagen. He was awarded the Nobel Prize in October 1927.

COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT
WITH 1927 AND SEVEN YEAR AVERAGE

WEEK ENDING FEBRUARY 4

	1928					1927			
	Wk. ending Jan. 14	Wk. ending Jan. 21	Wk. ending Jan. 28	Wk. ending Feb. 4	Average cases reported for week corresponding to Feb. 4 for past seven year	Wk. ending Jan. 15	Wk. ending Jan. 22	Wk. ending Jan. 29	Wk. ending Feb. 5
Actinomycosis	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-
Botulism	-	-	-	-	-	-	-	-	-
Cerebrospinal Men	-	1	-	1	1	2	1	-	1
Chickenpox	152	97	105	136	97	136	122	113	139
Conjunctivitis Inf.	-	-	-	-	3	-	2	-	-
Diphtheria	44	27	46	42	63	31	38	29	35
Dysentery, Amoebic	-	-	-	-	-	-	-	-	-
Dysentery, Bacillary	-	-	-	-	-	-	-	-	-
Encephalitis, Epid.	-	1	1	2	1	-	-	1	-
Favus	-	1	-	-	-	-	-	-	-
German Measles	5	2	6	3	7	5	4	4	3
Hookworm Infection	-	-	-	-	-	-	-	-	-
Influenza	3	2	7	11	45	24	28	31	11
Leprosy	-	-	-	-	-	-	-	-	-
Malaria	-	-	1	-	-	-	-	-	-
Measles	142	139	164	265	248	17	49	48	60
Mumps	88	140	95	78	49	49	28	32	23
Paratyphoid Fever	1	1	-	1	-	-	-	1	1
Pneumonia (Broncho)	35	27	27	33	46*	34	52	26	38
Pneumonia (Lobar)	66	57	58	37	45	32	57	52	48
Poliomyelitis	-	1	1	2	-	-	-	1	1
Scarlet Fever	112	149	124	85	143	101	111	104	116
Septic Sore Throat	3	-	4	1	2	4	2	3	2
Smallpox	53	21	15	6	2	-	-	-	-
Tetanus	1	-	1	-	-	-	-	-	-
Trachoma	-	-	-	-	-	1	-	-	-
Trichinosis	-	-	-	-	-	-	-	-	-
Tuberculosis (Pul.)	20	21	63	22	34	31	25	30	30
Tuberculosis (o f.)	1	2	7	6	2	2	4	6	3
Typhoid Fever	3	2	1	-	5	1	2	6	1
Typhus Fever	-	-	-	-	-	-	-	-	-
Whooping Cough	120	130	125	155	69	47	58	61	40
Gonorrhoea	93	20	37	38	18	63	11	21	12
Syphilis	59	18	75	42	27	27	21	30	10

*Average for three years. Made reportable January 1, 1925. Remarks
No cases of cholera, Asiatic, glanders, plague, rabies in humans and yellow
fever during the past seven years.

LEGISLATIVE NOTES

All the bills dealing with vaccination introduced into the Legislature this year have been withdrawn. No hearings were held and no new action is to be expected during this session.

HOUSE BILL 748

The Joint Judiciary Committee conducted a hearing on this bill Tuesday, February 21.

This bill would if enacted practically destroy the provision in the present law which obliges plaintiffs to file action for malpractice suits within two years. The text is as follows:

An Act relative to the Limitation of Actions against Physicians and Others for Malpractice Error or Mistake

Section 1. Section four of chapter two hundred and sixty of the General Laws as amended by section one of chapter three hundred and nineteen of the acts of nineteen hundred and twenty-one is hereby further amended by inserting after the word "accrues" in the ninth line the words "or becomes known"—so as to read as follows:—Section 4. Actions for assault and battery, false imprisonment, slander, actions against sheriffs, deputy sheriffs, constables or assignees in insolvency for the taking or conversion of personal property, actions of tort for injuries to the person against counties, cities and towns and actions of contract or tort for malpractice, error or mistake against physicians, surgeons, dentists, hospitals and sanitariums shall be commenced only within two years next after the cause of action accrues or becomes known, and actions for libel shall be commenced only within one year next after the cause of action accrues.

Section 2. This act shall take effect upon its passage.

The bill was opposed by Dr. J. S. Stone representing the Massachusetts Medical Society and the Massachusetts Homeopathic Medical Society. Representative Hale of Springfield, the officers of the State Dental Association, the optometrists and Mr. Romans, an attorney who has been counsel for defendants in some cases, Miss Johnson of the State Nurses Association and several physicians recorded oppositions.

HOUSE 707

The adverse report of the Committee on State Administration upon this bill to establish a Board of Registration of Osteopathy has been accepted by both House and Senate.

RECENT DEATHS

FOSTER—Dr. HORACE KENDALL FOSTER for a long time a prominent physician of Peabody died at his home in that city February 20, 1928, aged 73. He was born in North Andover Dec. 5, 1854, a graduate of Dartmouth College in the class of 1879 and of Dartmouth Medical School three years later. Settling in Peabody, he joined the State Medical Society and served it as Councilor for a long series of years. Dr. Foster was medical examiner of the 8th Essex District and for 20 years president of the J. B. Thomas Hospital in Peabody, also vice-president of the Warren Five Cents Savings Bank. He is survived by two sons and a daughter.

JOURNEY—Dr. WARREN WILLIAM JOURNEY of Boston, a graduate of Tufts College Medical School in 1900, died suddenly while playing a game of billiards February 20, 1928, from heart disease at the age of 62.

SAYLES—Dr. JOSEPH BORLAND SAYLES, a Fellow of the Massachusetts Medical Society since the date of his graduation in medicine, died suddenly from heart disease at Taunton February 21, 1928, at the age of 62.

Dr. Sayles was born in Somerset, Mass., February 28, 1865, took an M.D. from Bellevue Hospital Medical College, New York, in 1888 and another from Dartmouth Medical School in the same year. He settled in practice in New Haven, Conn., moved to West Newton, Mass., in 1895 to Dighton the following year and to Taunton in 1911. There he had practiced since devoting his attention largely to dermatology. He was a member of the New England Dermatological Society and a Fellow of the American Medical Association.

EDSON—Dr. PTOLEMY O. MEARA EDSON, a retired Fellow of the Massachusetts Medical Society, died at his home in Roxbury after a short illness with pneumonia February 13, 1928, at the great age of 94.

He was born in Chester, Vt., on December 27, 1833, was the son of Ptolemy and Susan (Pratt) Edson, was prepared for college at Appleton Academy in New Ipswich, N.H., and was graduated from the University of Vermont in 1857 and then attended the medical department of the university taking his M.D. in 1860. After his graduation he assisted his father in practice in and around Chester.

In Civil War days Dr. Edson served as assistant surgeon in the First Vermont Cavalry from November 1861 until March 1864 and in the latter year he became surgeon with the rank of major of the Seventeenth Vermont Infantry, serving as such until February 1865. Upon returning home from the war he resumed practice in his native place, Chester, but in 1866 moved to Roxbury where he since had made his home and continued his profession. He joined the State Medical Society in 1867 and was retired in 1904. He was a member of the Lovell Legion and had belonged to the G. A. R. and the Roxbury Society for Medical Improvement, the Norfolk District Medical Society, Boston Obstetrical Society and the Boston Medical Library. He served many years on the Boston school committee. In his religious interests he was affiliated with the old First Unitarian Parish. For many years Dr. Edson resided on Warren Street in Roxbury, before removing to Elm Hill Avenue.

On October 30, 1865, Dr. Edson married Mary Augusta Young in Bangor, Me. Mrs. Edson died in 1922. Surviving Dr. Edson are two sons and two daughters. The sons are Dr. Carroll Everett Edson, residing in Denver, Col., and John Wells Edson, a resident of Dedham.

WOODCOCK—Dr. GALEN MURRAY WOODCOCK of Bangor, Maine, died in that city February 17, 1928, aged 75. He was a native of New York and was graduated at the New York University Medical College in 1873 at the age of 21. After practicing in New York and in South Brewer, Maine, he settled in Bangor in 1882. He was a Fellow of the American Medical Association and a member of the Maine Medical Association.

THE DEATH OF DR. JOHANNES FEBIGER

Dr. Johannes Febiger has recently died. He was an able pathologist and had devoted much time to research work in cancer, having been the first to produce cancer experimentally with a definite agent according to the opinion of some writers.

He was Professor of Pathological Anatomy in the University of Copenhagen. He was awarded the Nobel Prize in October 1927.

OBITUARY

JOHN COLLINS WARREN*

1842 1927

Born of a family whose name for more than a century has implied not only eminence in the medical profession, but also the highest ideals of service to the community carrying on this trust successfully with its manifold duties and its obligations and laying down the burden only after having seen the accomplishment of his most cherished ambitions, such is an epitome of the life of Dr John Collins Warren.

Great grandson of Dr John Warren, one of the founders of the Harvard Medical School, whose brother, Dr Joseph Warren, fell at the Battle of Bunker Hill, grandson of Dr John C Warren, one of the founders of the Massachusetts General Hospital son of Dr J Mason Warren, again a surgeon at the Massachusetts General Hospital of notable accomplishments, Dr John Collins Warren in his sixty-one years of professional life sought and found opportunity to maintain the traditions of his illustrious forbears, and to add materially to their brilliant record.

The two discoveries which have had the most profound influence upon medical science, anaesthesia and antiseptics, came within his lifetime. The discovery of ether anaesthesia was made when he was but a child, but the controversies which followed it extended into the period of his early medical career, and he remained to the last a supporter of the claims of Dr W T G Morton as the real discoverer of the use of ether as an anaesthetic. In 1869 Dr Warren visited Lister in Glasgow, and made a study of his methods of employing antiseptics in surgical operations. On his return to Boston he assumed an active part in the introduction of these methods at the Massachusetts General Hospital.

The microscopic study of pathological material derived from operations was at this time in its infancy, and Dr Warren was one of the first to develop in this country the practical application of these methods, not only for the benefit of the individual patient, but also for the investigation of surgical disease. During the Civil War while still a student, he served as a medical cadet in the Union forces and there obtained an interest in and a knowledge of surgical infections which years later led to his book on Surgical Pathology and Therapeutics, his most notable literary accomplishment.

Loyalty and devotion to the Massachusetts General Hospital, and to its traditions were bred in the very fibre of Dr Warren's being. Through all the stages of promotion from house-pupil to senior surgeon he gave to the hospital the best he had. As a surgeon he was courageous, resourceful and thorough and he was admired and loved alike by his patients and his assistants. His Sunday ward visit when he was a senior surgeon was never to be forgotten. Each case on the wards was reviewed and discussed and all with a nice formality and kindly courtesy that was an inspiration to the group of assistants and younger colleagues who made a point of attendance on these occasions. His deepest interest was in the surgery of tumors and it was in this subject that he made his greatest contributions to the advance of surgical knowledge and practice notably in the surgery of cancer of the breast.

A clear systematic thinker widely read in surgical literature, and endowed with a happy faculty of apt illustration of the point he wished to emphasize, by anecdote or example he made an admirable teacher of Surgery whose influence was felt by many generations of students in the Medical School and in the Hospital. The time and attention he gave to the preparation of his lectures and clinics was an example to his younger assistants, and the readiness with which he sacrificed his personal comfort or pleasure to this purpose was an inspiration to them, and a fair indication of the great respect in which he held his duties and his privileges as an instructor of medical students. He held the post of Moseley Professor of Surgery in the Harvard Medical School from 1899 to 1907 when he became *emeritus*.

On his retirement from active hospital service in 1905, he gave up his private practice and devoted himself unremittingly to the promotion of the many causes in which his varied life had led him to take the deepest interest. Chief among these interests was the Harvard Medical School, and when it became necessary to move the School from the then inadequate buildings on Boylston Street, it was to him and to Dr Henry P Bowditch that was vouchsafed the vision, the faith, and the ability to conceive the magnificent project for the present buildings on Longwood Avenue, and to secure the great fund needed for their construction and endowment. We may rejoice that Dr Warren at least lived to see this vision materialize, as one after another of the hospitals and laboratories necessary to the completion of this great medical centre came to occupy their place in accordance with the original plan. Even the dormitory for medical students which Dr Warren was the first to advocate, but which at that time seemed so remote as to be beyond all expectation, came into being and was actually opened for occupation before his death.

In 1899 a sum of money was left by the will of Caroline Brewer Croft for the investigation of the cure of cancer, and Dr Warren was named a Trustee of this fund. This bequest led to the organization of the Cancer Commission of Harvard University, of which Dr Warren for many years was Chairman. Under his guidance, and chiefly due to his own interest in this subject and to a happy faculty of securing and sustaining the interest of others the Cancer Commission added to its resources and extended its activities. The funds for the construction of the Collis P Huntington Memorial Hospital for Cancer Research were obtained almost entirely by his efforts and the dedication in 1922 by the President and Fellows of Harvard College, of the adjoining laboratory building as the J Collins Warren Laboratory was held by him to be the supreme honor of the many accorded him in his professional career.

Dr Warren had an almost boyish simplicity and directness of character, and a sense of humor which contributed in no small degree to the facility with which he established himself in the hearts of those about him. It was not his honors and accomplishments so much as his character and personality which left an indelible impression. His sincerity, his unflinching courtesy, reminiscent of a generation earlier than his own, his indefatigable industry and his loyalty were the striking qualities which so endeared him to his patients, his students and his colleagues. There can be few finer examples in medical history of a family tradition of service extending over five generations and productive of so much benefit to the community and to the medical profession. The continuity of this tradition is for the Harvard Medical School, no less than for the Medical Profession of Boston, a most enviable heritage.

HARVEY CUSHING

CHARLES ALLEN PORTER

ROBERT B GREENOUGH

*Prepared for the Faculty of the Medical School of Harvard University and read at their meeting February 3 1928

CORRESPONDENCE

THOUGHTS INSPIRED BY READING THE PAPER OF DR REGINALD FITZ

Worcester Mass
February 5 1928

To the Editor of the Boston Medical and Surgical
Journal

One of the chief pleasures in reading Dr Reginald Fitz's article 'Clinical Observations on Well Patients' in your issue of Feb 2, 1928 is in the reminder that the art of medicine is still as important as the science of medicine

Persons in health pursue their daily activities Those seeking the consulting room do so because of disease The full significance of this is not always appreciated

In recent years emphasis perhaps undue emphasis has been placed upon the scientific phases of medical practice Furthermore the student and young practitioner naturally and with commendable zeal are more interested in the mechanics than in the philosophy of their profession Hence the growth of specialization Possibly also this phenomenon may in some measure reflect the materialistic the mechanistic concepts of the period

As experience widens and judgment matures it is realized that in general practice a large and increasing proportion of those seeking aid are much more in need of our art than of our science The usefulness the frequent surprising results the success of the heroic arm of country practitioners far removed from the expert assistance of the specialist, abundantly demonstrates this thesis

Earlier art bordering on the necromancy was the best that the profession had to offer Later the microscope test tube and the like offered little to the average sufferer save the sterile formulae of science Today it is possible to quicken our good offices by that sympathetic insight and sound counsel which not only promote restoration to health but frequently differentiate the physician from the doctor Let it not be said

Myself when young did eagerly frequent
Doctor and saint and heard great argument
About it and about yet evermore
Came out by the same door wherein I went

With Mackenzie we believe a careful study of the history and the environmental factors which concern the individual are of the essence of success After all probably the most important thing in medicine is a knowledge of what *not* to do

A E P ROCKWELL

TETANUS' SEVERE CASE WITH RECOVERY'

Dear Editor

This case seems of sufficient interest to report John O— aged 49 called me at 2 a m Sunday November 27 1927, having been sent to the Lowell General Hospital in a state of tonic convulsion which began at midnight He was injured two weeks before this having his left hand drawn into a wool scouring machine causing a lacerated crushing wound of the ring and little fingers

His physician picked out particles of wood and grease, and dressed the hand daily in antiseptic soaks The day before admission to the hospital he was taken with very severe abdominal pain for which he received a sedative Serum was not given

His condition on admission was one of tense rigidity of spine with opisthotonos abdominal muscles board like jaws tightly set, short jerky respirations livid face and bathed in a profuse exhausting sweat

He was given 4500 units antitetanic serum by spine and the same intravenously He was some-

what improved by this but complete relaxation was not obtained for 48 hours Later in the day 20,000 units were given by vein and this amount was given daily for four days divided between veins and spine.

The patient continued having spasms three to six times in 24 hours for a number of days and they were very exhausting

He was kept alive by rectal enemata for a week being unable to swallow food These enemata were supplemented by water both rectally and by hypodermoclysis and Chloretone was given in 5 to 15 grain doses Morphine was avoided because of the fear of respiratory paralysis

He gradually improved but each time the serum was reduced the spasms recurred The little finger healed slowly and finally on December 17 I removed it under Novocaine anesthesia The X-rays showed bone involvement of two phalanges and I felt that the spores were probably lingering there and feeding the toxins to the system

He improved much faster after this and received his last large dose 5000 units of serum December 22

The following day 1500 units were injected near the wound He was discharged to his home practically well but weak January 1

He received in all 187,000 units of antitetanic serum with no untoward results There was never high fever kidneys showed no special change except excessive amounts of triple-phosphates in the urine

Very truly yours

G FORREST MARTIN, MD FACS

SIR FRANCIS DRAKE AND THE AUTOPSY IN THE WILDS NEAR THE GULF OF DARIEN

Mr Editor

The recent interesting meeting on various aspects of pathology held at the Boston Medical Library in which the speakers stressed the value of autopsies so strongly may perhaps add point and interest to this letter

It is shown that the great explorer implacable foe of Castilian supremacy on the seas was also alive to the value of autopsies and that Drake's drum beat for medical science as well as to arms for repeated slings of the Castilian monarch's beard

The quotation is from Sir Francis Drake by E F Benson Harper Brothers 1927 Every doctor should make time to read this book

Drake had been engaged in making raids seawards from his camp in the wilderness with his 70 odd Devon boys to mask his intention of land attack on the mule trains laden with gold and silver he intended to intercept this rich prize as the pack trains neared Nombre de Dios on the journey from Peru He had been on a raid with two of his pinnaces and on his return in the first week of January 1573 Came as yet heavier trouble

A deadly sickness broke out in the camp within two or three days of its appearance six men died of it and soon thirty, or nearly half the entire company were stricken

Probably it was yellow fever for malaria could not have claimed its victims so speedily

The skill of the ship doctor was of no avail, but it was possible thought Drake that a post mortem might show what organs were affected and so point to a remedy But none must be able to say that he spared himself and when one night, his young brother Joseph died in his arms he ordered the doctor to take him as the subject for dissection But nothing was found that could suggest a cure and then in turn the doctor who had already suffered and recovered from the disease made his own sacrifice for the sake of the rest.

He concocted a dose of dangerous potency which

he thought might prove efficacious, but he tried it first, not on any of his patients, but on himself, and died of it. The two incidents make us realize what sort of spirit animated the leaders of the fever stricken camp.

'These were calamities which might well have snapped even a finely tempered courage. Twenty-eight of the crew had now perished of the plague, there had been four casualties otherwise and both Drakes brothers were dead. But his flame never flickered for a moment, nor did the idea of giving up the quest so much as enter his head.'

This unknown doctor of Drakes company surely deserves a place in history a pioneer before the great Lazeai.

Very truly yours

WILLIAM PEARCE COUES

January 26th 1928

CLINICAL LABORATORY SERVICE

Dear Editor

I am enclosing herewith an article bearing on clinical laboratory services in the United States.

This is sent to you for your information. You are at liberty, also, to publish it in whole or in part if you so desire. This report represents one of the very important pieces of work recently put into effect. Its tendency is to prevent lay technicians promoters or others from presuming to dictate to or to advise physicians regarding matters which properly belong to graduates of medical schools.

Very truly yours,

N P COLWELL Secretary,
Council on Medical Education and Hospitals

CLINICAL LABORATORY SERVICE IN THE UNITED STATES *Statement by the Council on Medical Education and Hospitals*

During the last decade there has been much discussion in medical and laboratory journals and particularly on the platform of medical and laboratory conventions, regarding the status of the clinical laboratories of the country. Especially it was regretted that the practice of clinical pathology, regarded as one of the medical specialties had fallen into disrepute. The fact was lamented that the laboratory work had fallen into the hands of lay technicians and become the toy of persons who had a purely commercial point of view and very little training for the work. Much disgust and quite a strong note of despair was sounded by those few members of the medical profession who had championed the cause of clinical pathology and had adopted that specialty as a life work.

Many letters were received at the office of the American Medical Association from practitioners of pathology and leaders in medicine regretting the drift toward 'lay commercialism' and urging that something be done to counteract it. What to do about it was a question. Organizations of chemists were interested, because some of their members ran laboratories. Likewise organizations of clinical pathologists, bacteriologists and of the medical profession were equally interested. Some of these organizations working alone undertook to investigate and to standardize the practice of clinical pathology hoping to check the drift of that practice into the hands of technicians and restore it to its rightful place as a medical specialty.

The efforts of those organizations working single handed were of little or no avail except to emphasize the enormity of the task and the necessity for cooperation.

COÖPERATION EFFECTED IN 1923

The necessary coöperation of the laboratory and medical organizations was brought about in 1923 at

the annual meeting of the American Medical Association in San Francisco. At that time, delegates sent by the American Chemical Society and the American Association of Pathologists and Bacteriologists separately petitioned the American Medical Association to establish some supervision over clinical laboratories. This led to the appointment of three committees representing the American Chemical Society, the American Association of Pathologists and Bacteriologists, and the Council on Medical Education and Hospitals. At a joint meeting of these committees in Chicago early in 1924, after much deliberation certain basic principles underlying sound laboratory service was agreed upon and emphasized especially the necessity of a qualified bona fide director as the prime essential. The joint committee agreed that the work could best be conducted by the Council on Medical Education and Hospitals.

The first steps were (a) to secure a complete list of laboratories in the country (b) the preparation of a schedule of essentials in an approved clinical laboratory and (c) the preparation of a questionnaire by which the essential facts regarding each laboratory could be obtained. Each of these measures was carried out with the advice and coöperation of fifty or more clinicians and others expert in laboratory work, including the committeemen of the above-named organizations and by the officers of the American Society of Clinical Pathologists, which society very early showed an interest, and from which the Council has received a hearty cooperation.

After being revised and adopted by all parties interested, the questionnaire was mailed to all the laboratories of the country and a most hearty response was received. A complete report of the survey 'Essentials of an approved Clinical Laboratory' and a preliminary list of laboratories which appeared to be fully complying with those 'Essentials' were published in the Hospital number of the Journal for April 3 1926. The facts as published were submitted to the House of Delegates of the American Medical Association at the Dallas session in 1926 and approved by that body.

To assist in giving as fair consideration as possible to each application for approval, a strong committee of laboratory experts was formed in every state or section of the country. These committees aggregate one hundred and twenty individuals representing as equally as possible the cooperating organizations and hence the interests of the laboratory profession. Under the direction of this Council each committee man makes his investigation and renders his report or advice independently of other committeemen in the same district.

At the present time of the three hundred and fourteen laboratories that have reported one hundred and fifty-one, after careful investigation, have been placed on the approved list and other applications for approval are constantly being received.

The Council lends all possible assistance to laboratories whereby they may become eligible for admission to the accepted list. Every laboratory that makes a report and signifies a desire to conform to the requirements is informed in regard to any deficiencies. The spirit of this movement all the way through is constructive. Anyone who knows the condition of the laboratory field at the time this survey was begun would not expect very telling or spectacular results to be shown by this time. Nevertheless there are ample reasons for believing that actual improvements are being made. (1) A number of laboratories formerly run by technicians and only nominally under medical directors have come under the ownership and actual control of clinical pathologists of high professional standing and ripe experience. (2) A number of laboratories under the control of technicians have gone out of business. (3) The 'Essentials' have been published repeatedly.

and thus brought to the attention of all persons working in the field of clinical pathology (4) there is an increased demand for pathologists to man the clinical laboratories of the country (5) the director of the Mayo Foundation says that the salaries offered the pathological graduates of the Foundation are double those offered to other graduates of the Foundation (6) the feeling of uneasiness indicated in the discussions of a few years ago has subsided to a considerable degree, and there is a more hopeful attitude on the part of clinical pathologists themselves

FUTURE OUTLOOK

The movement is still in its beginning but a good start has been made To what extent doctors have actually discontinued sending specimens to unapproved laboratories and are sending them to approved laboratories is not known The educational results, however, are becoming increasingly evident In order to secure the best analyses for the benefit of their patients as well as to best conserve the interests of the medical profession, physicians should refuse to have their work done at laboratories conducted under the direction of nonmedical individuals Much depends also, on the continued hearty support of the various organizations and individuals who operate in the laboratory field That this is already assured is indicated by the promptness with which laboratories are filling out and returning the form that has recently been mailed out by the Council on Medical Education and Hospitals for a complete and needed resurvey of laboratory service The resulting data from this survey will be published for the benefit of all Of course any laboratories that are not yet on the list will be promptly considered for approval if they express such a desire

NEWS ITEMS

HARVARD MEDICAL SCHOOL NEWS—APPOINTMENTS—The following appointments were recently made at the Harvard Medical School *For one year from September 1 1927*—Howard Burnham Sprague M.D., Assistant in Medicine Randall Clifford Assistant in Medicine *From January 1—September 1 1928*—Walter Swan Burrage Research Fellow in Medicine *From February 1—September 1 1928*—Charles Whittier Young Associate in Comparative Pathology Emil Bogen, Research Fellow in Physiology *From March 1—September 1 1928*—Frank Bostrom Teaching Fellow in Orthopaedic Surgery

TUITION IN THE YALE MEDICAL SCHOOL WILL BE RAISED—It is reported that the tuition fee in the Yale Medical School will be raised to five hundred dollars per year but students who enroll before June 30th of this year will be accepted at the present rate of \$300

THE APPOINTMENT OF DR. E. J. DENNING—Dr. Edward J. Denning 45 Bay State Road Boston has been appointed Chief of the Medical Department at the Carney Hospital

Dr. Denning was born in South Boston was graduated from the Lawrence Grammar School 1893 from Boston Latin School 1898 from Harvard, A. B. Cum Laude 1901 and from Harvard Medical School with an M. D. Cum Laude in 1905

Dr. Denning is exceptionally well qualified by experience and by training for the position of Chief of the Medical Department for since 1917 he has been officially connected with the Carney Hospital in which he attracted the attention of the Hospital authorities first in the Out Patient Department and later as Assistant Physician. He has been Assistant

Professor of the Theory and Practice of Medicine in Tufts College since 1924

Dr. Denning will hold at Carney a position in the Medical Department similar to that held by Dr. F. B. Lund in Surgery by Dr. W. Russell MacAusland in Orthopedics and Dr. F. W. Johnson in Gynaecology

INFANTS AND THE AGED ARE THE SAME TO SMALLPOX—Smallpox is no respecter of persons with reference to age condition or station in life wealth or any other factor aside from immunity due to a previous attack of the disease or to vaccination That the disease may occur at any age is illustrated by two recent cases in Middletown One is a baby born while the mother was in the beginning stage of smallpox and the baby broke out with the disease by the time it was a week old The other is a man who had smallpox at the age of seventy-one years

This seventy-one year-old patient had never been vaccinated His daughter and son-in-law with whom he lived in Middletown were vaccinated during the recent vaccination campaign Someone told the family that people do not have smallpox after they reach the age of fifty-five or sixty This was a mere rumor and not a medical opinion However the people believed it and the elderly gentleman was not vaccinated Later he came down with smallpox and thus demonstrated that the disease may attack persons late in life

The point may well be emphasized that no age is exempt from smallpox The disease attacks people of all ages from early infancy to advanced age The only way a person of any age can be assured of protection against smallpox is to keep himself immune through vaccination

Age distribution and vaccination history of smallpox cases in Connecticut January 1 to February 14 1928

Age Groups	Cases
0-4	6
5-9	13
10-14	24
15-19	24
20-24	20
25-29	11
30-34	10
35-39	10
40-44	1
45-49	6
50 and over	4

Total 129
No record 6

135

Vaccination history of cases

Never vaccinated	123
Vaccinated*	4
Questionable	2
No history filed yet	4
Not stated	2

Total 135

*The 4 cases that were vaccinated were vaccinated approximately 22 42 43 and 44 years previous to having smallpox — *Bulletin of the Connecticut State Department of Health*

QUARANTINE AGAINST RABIES—Fall River has arranged to guard the approaches to the city so as to prevent stray dogs from entering

Several cases of rabies have been found in dogs in this section of the state particularly in Somerset and Swansea

Three persons in Fall River are under treatment to prevent the development of rabies after having been bitten by dogs

Dr Ernest M Morris, Health Commissioner of the city, is taking all possible precautions to protect the people of the city

Sensational accounts of wild dogs in wooded areas in this part of the state have been published. The police have killed seventeen such dogs according to newspaper accounts

NOTICES

A WARNING TO MEMBERS OF THE MASSACHUSETTS MEDICAL SOCIETY

Information has again reached the JOURNAL office that an unauthorized solicitor is at work attempting to collect dues from Massachusetts Medical Society members. He also claims that he is authorized to collect subscriptions for the JOURNAL, which statement is false.

Notices, warning members that unauthorized solicitors are at work, have previously appeared in the JOURNAL, but have evidently failed to attract the attention of all the members.

There is no solicitor authorized to collect subscriptions for the JOURNAL nor is anyone sent from this office to collect dues of Massachusetts Medical Society members. Dues are payable to the District Treasurers and State Treasurer only.

CORRECTION

The article 'The Early Diagnosis and Prevalence of Non Paralytic Anterior Poliomyelitis' by Dr Elliot H Luther which appeared in our issue of December 22 page 1175 carried an incorrect title. It is correct as it appears here.

ANNUAL GRADUATE FORTNIGHT OF THE NEW YORK ACADEMY OF MEDICINE

An unusual opportunity to study the degenerative diseases of old age will be given by The New York Academy of Medicine October 1 to 13, 1928, by means of a program of lectures, clinics and courses in hospitals and teaching institutions.

This is to be the first "Annual Graduate Fortnight" of the Academy, inaugurating a form of graduate medical education novel in this country. In October of each year a problem of medicine or surgery of outstanding importance and interest to practicing physicians will be selected. The topic for 1928 is described as "The Problem of Aging and Diseases of Old Age."

Not only will the diseases and management of old age be discussed but attention is to be directed toward the prevention of premature and postponing of normal aging. Diseases of the heart and affections of blood pressure and kidneys will be studied under the guidance of men of national and international reputation.

By concentrating all the available knowledge and experience on a single problem each year it is believed the greatest benefit to general practitioners, and specialists as well can be secured. The coming sessions will devote considerable time to pointing out the effect of wrong modes of living. Aging, as it relates to health insurance and to economic and industrial problems is to be included in the curriculum.

No fees are to be charged for the Fortnight. It is not expected that every physician will feel disposed to attend all of what will be a program of long duration each day. Special courses to be arranged in conjunction with the sessions by medical schools and teaching hospitals, may however, carry a nominal charge for those who attend them.

Sessions are scheduled for morning, afternoon and

evening, with suitable arrangements for physicians from out of the city to have supper served at the Academy between the afternoon and evening sessions.

REPORTS AND NOTICES OF MEETINGS

MEETING OF THE HARVARD MEDICAL SOCIETY

The regular meeting of the Harvard Medical Society was held in the Peter Bent Brigham Hospital on Tuesday evening January 24 1928, at 8 15 o'clock. After the presentation of two cases Dr A. V. Bock, Asst Professor of Medicine at the Harvard Medical School and chairman of the meeting, introduced Dr Herman Blumgart who presented two papers. The first paper was entitled, 'The Effect of Pituitrin applied intranasally in patients with diabetes insipidus.' The second concerned itself with the velocity of blood flow in circulatory failure, in anemia, and in pulmonary emphysema.

The first case was presented by Dr Sagebiel. The patient, a married American garage-worker of 40 years came into the hospital on the 17th of January 1928, giving a history of abdominal pain and nausea. Up until entry he had been quite well except for measles as a child and typhoid fever twenty six years ago. On the second of January he had experienced a sharp pain in the epigastrium which continued even after induced vomiting and a cathartic. The pain went down to the right lower quadrant where it became of a sharp character. He applied ice-bags and took more cathartics with no relief. The pain became intermittent during the next two weeks and moved up opposite the umbilicus on the right side with no radiation.

On admission to the hospital his temperature was 102° and his white count 17,000. Physical examination showed nothing outside the abdomen except a few dental caries and cervical and inguinal adenopathy. Palpation of the abdomen showed a slight fullness in the right upper quadrant and an indefinite mass. A walled off abscess from a ruptured appendix was diagnosed and operation was done. Upon incision of the peritoneum a large amount of foul-smelling pus welled up. Further exploration brought to view a typical gallstone. Convalescence was uneventful with draining every day. The white count went down and there was no pain.

The second case was presented by Dr John Fulton. The patient was an American boy of six the first child and a difficult instrumental case with forceps resulted in laceration in the back of the head. He has vomited for four years, and last September after an attack of whooping cough the vomiting became projectile in character and he complained of pain in the head. In December he developed an internal squint with evident paralysis of the left sixth nerve. He became unsteady on his feet and drowsy and was brought into the hospital.

Examination showed extremely choked disc with moderate diminution of visual acuity as well as could be determined. A small defect in the suboccipital region gave evidence of pulsating crepitation and on auscultation a loud, high pitched systolic bruit was heard. Diagnosis of haemangioma, rare in children, or venous stasis with increased intracranial pressure was made. 15-20 cc of a 50% solution of magnesium sulphate was given by mouth each morning. The ataxia disappeared the bruit was less loud his choking was reduced from 6 D to 2½ D but the external rectus paralysis continued. The sutures palpably separated on entry remained so being due to a congenital defect or to erosion from

increased intracranial pressure. No decision as to further treatment had been made.

In his first paper Dr Blumgart presented a series of eight cases of diabetes insipidus, all with a different etiology. Posterior lobe extract of the hypophysis was used as subcutaneous injections as nasal sprays and also applied with cotton pledgets soaked in it and allowed to remain in the nose. Graphs comparing the fluid intake and the urine output show a great variance between different patients. Two conclusions may be drawn. The results obtained by nasal spray, by the pledget method or by intramuscular injections are on the average the same. Secondly, pituitrin is apparently absorbed best when applied high up in the nasopharynx in the region of the olfactory nerve, thus if the drug is not applied to portions of the mucous membrane, it is relatively ineffective.

In introducing his second paper Dr Blumgart summed up the history of measuring the velocity of blood flow. Potassium cyanide has been injected and then blood from different points was tested by the Prussian Blue reaction. Hypotonic salt solutions have also been used and recently fluorescein has been injected and samples of blood taken at five second intervals from some distant point. The difficulties with these methods were that blood could only be taken from the cubital vein, a steady flow of blood was necessary and then of course the clogging of the needle and possible thrombus formation.

The principle of the old method that of injecting a substance and measuring the time it took to travel to a definite point is the same for the new method. Two-tenths of a cubic centimeter of Radium C or active deposit of radium is injected. The gamma rays and beta particles given out are capable of penetrating ordinary substances but are absorbed by lead. Thus a lead plate with a hole in it is put over the auricle when the radium is injected into the cubital vein. It travels to the auricle and is absorbed by the lead except that with the hole at the outer side of which a sensitizer is put to record on a moving drum the moment it is stimulated by the radioactive substance. The advantage of this method is that it does away with all the old difficulties and in addition the radium has no toxic action up to three hundred milligrams. It decays in three hours to inactive radium D and the blood and urine show no untoward subjective or objective effects. By this method the time of blood flow from elbow to heart was found to be from two to fourteen seconds, the pulmonary circulation time which bears no relation to the height and weight of the individual was on the average eleven seconds.

It was definitely shown that there is a relation between blood velocity and pathological processes. In rheumatic heart disease with a slowing of the heart the pulmonary circulation time becomes six to seventy seconds. Patients with valvular disease, syphilitic hearts and hypertension were examined. In no case was there increased velocity. A relationship between velocity of blood flow and peripheral edema was readily shown and while the increased velocity may not be the primary cause of the edema it certainly is a contributing factor to the result. In pulmonary emphysema the velocity through the lungs was found to be normal or slightly above the normal average with the vital capacity diminished and the venous pressure normal. This result may be due to myocardial insufficiency.

The blood velocity was also studied after digitalization. Recent findings at Vanderbilt University have shown that there is a lessened output of the heart under digitalis in unanesthetized animals. By the study of blood velocity it was found that a dramatic quickening of the blood flow occurred after digitalis, this being sufficient to overbalance any effect digitalis might have in lessening the blood output.

In anemia the problem is to decide whether the corpuscles make more trips or take up more oxygen to compensate for the deficiency. In hyperthyroidism the blood flow through the lungs was very fast, while in myxedema the slower blood flow was increased by thyroid gland treatment.

The paper was extremely interesting and showed the possibilities of such a method as of diagnostic importance to the clinician.

ANNUAL MEETING OF THE BOSTON HEALTH LEAGUE

The Annual Dinner Meeting of the Boston Health League, a federation of thirty-one agencies engaged in the promotion of public health work in Boston, was held at the Hotel Kenmore, 496 Commonwealth Avenue, on Wednesday, February 15, at 7 P. M.

Dr G. C. Sbuttuck, Assistant Professor of Tropical Medicine at Harvard, delivered an illustrated lecture on "Scenes in Tropical Africa" from which place he has recently returned after an intensive study of tropical diseases.

Other speakers were—Dr John W. Bartol, President of the Boston Health League; Dr George H. Bigelow, Commissioner of Public Health for the Commonwealth of Massachusetts; Dr Alexander Begg, Dean of the School of Medicine of Boston University and Chairman of the Health Committee of the Chamber of Commerce; Dr Charles F. Wilinsky, Deputy Commissioner of Child Hygiene of the Boston Health Department and Executive Secretary of the Boston Health League.

The following officers were elected for the coming year—Honorary President, Dr Francis X. Mahoney; President, Dr John W. Bartol; Vice President, Rev. George P. O'Connor; Treasurer, Dr Richard G. Wadsworth; Secretary, Dr Merrill E. Champion.

The Health League has been an important factor in the past six years in co-ordinating the work of the official and voluntary health agencies. It has endeavored to promote efficiency and economy by harmonizing the work in this field.

The following agencies now comprise the membership of the League—Beth Israel Hospital Association; Boston City Hospital; Department of Social Work; Boston Dispensary; Boston Floating Hospital; Boston Health Department; Boston League of Women Voters; Boston Metropolitan Chapter American Red Cross; Boston Public Schools; Department of School Hygiene; Boston Tuberculosis Association; Catholic Charitable Bureau; Children's Hospital; Social Service Department; Community Health Association; Ellis Memorial and Eldredge House; Inc. Forsyth Dental Infirmary for Children; Hawthorne Club; Health Exhibit Committee of Boston; Household Nursing Association; Jewish Maternity Clinic Association; Lincoln House Association; Massachusetts Department of Public Health; Massachusetts General Hospital; Social Service Department; Massachusetts Homeopathic Hospital; Maverick Dispensary; Medical Mission Dispensary; Neighborhood Kitchen; New England Dairy and Food Council; Nutrition Clinics, Inc.; Peter Bent Brigham Hospital; Social Service Department; South End Diet Kitchen; Vincent Memorial Hospital; Women's Municipal League; Massachusetts Society for Mental Hygiene.

MEETING OF THE NEW ENGLAND HEART ASSOCIATION

The New England Heart Association in conjunction with the American Heart Association held a meeting on February 6, 1928, at John Ware Hall, Boston Medical Library. Dr. James B. Herrick, President of the Association, presided. The vice-president, Dr. W. H. Robey, gave the opening address in

which he outlined the functions of the American Heart Association as of three kinds to prevent heart disease to better the treatment of it in convalescence, and to educate the laity and the medical profession about the various cardiac conditions. After the treasurer's report by Dr Paul D White, a report of the year's activities by Dr Haven Emerson members of the Advisory Council and Board of Directors were nominated and elected.

The first paper of the evening was presented by Dr W Irving Clark of Worcester, Mass who spoke on "Effects of Accidents on Cardiac Employees." Two questions Dr Clark pointed out, come to the mind of the industrial surgeon in a cardiac case. Is the patient's heart condition due to the accident? Does the accident affect the heart function? To answer the first question, forty five definitely diagnosed cardiac cases were followed over a period of seven years. Record was kept of all accidents whether while in the factory or outside. In no case was it found that injury such as fractures and brain contusions lowered the man's capacity for work. An added mild infection also had no effect. To answer the second question eighteen large factories were sent questionnaires. Of these, three answered that in their experience there is sometimes a connection between accidents and increased heart trouble. The records of the Worcester City Hospital were searched and the final conclusions are that as a general rule the diseased heart is unaffected by accident, and that there is no accident which may cause an exacerbation in the cardiac patient.

The second paper of the evening, entitled "Accidents and Heart Disease from the Courts' Point of View," was given by Commissioner Frank J Donahue of the Industrial Accident Board of the Commonwealth of Massachusetts. Mr Donahue defined the Board of Compensation as a functioning board acting both as jury and judge. One member may render a decision, but the workman has a chance to appeal to the whole board. In most States the employee may obtain compensation for anything which occurs during his employment, while in others only for actual accident. The rule for the court is that there should be compensation for injury to the employee and not for pre-existing disease. This rule is not strictly adhered to. The final conclusion of the court is that pre-existing disease attaining its end or more acute condition in employment is not a personal injury unless it is accelerated by the employment and life shortened. After citing some cases in his experience Mr Donahue concluded that severe accidents, especially in older people do accelerate heart disease and perhaps cause death.

Mr Gay Gleason presented the third paper on "Accidents and Heart Disease from the Insurance Company's Point of View." The question of causation is the important thing from this angle. It is necessary to differentiate whether the cause was the accident or the pre-existing disease and how much of the result was due to each cause. He also concluded from cases in his experience that injuries aggravate heart trouble.

The meeting was of interest in that it showed the cardiologist how other people consider his work.

MEETING OF THE EAST BOSTON MEDICAL SOCIETY

The annual meeting of the East Boston Medical Society was held at the Parker House in Boston February 23rd.

After the dinner Dr George B Magrath gave an interesting address in which he recounted many interesting experiences in connection with his work as Medical Examiner.

Major-General Edward L Logan told of interesting features of the convention in Paris last summer of the American Legion.

Dr W H Ensworth acted as toastmaster. The members of this Society include physicians in East Boston and Winthrop.

The officers elected for the ensuing year are as follows: President, Edward D Hartnett M D; Secretary, Lonie Salerno, M D; and, Treasurer, Alexander L McLaren, M D.

FIFTEENTH ANNUAL MEETING OF THE MEMBERS OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER, MARCH 3, 1928

The annual meeting of the members of the Society is held on the first Saturday in March. In 1928 this falls on March 3rd.

Plans are being made to have the forthcoming meeting the most interesting and important annual meeting ever held by the Society.

There will be business meetings of the Executive Committee and Board of Directors at the Society's headquarters, 25 West 43rd Street, and a luncheon meeting for members at the Hotel Biltmore, at 1 o'clock. At the luncheon meeting there will be a short business session and a general discussion of the Society's work following two short addresses on the public health and medical aspects of the work. In the morning Dr Francis Carter Wood, Director of the Institute of Cancer Research at Columbia University, will give a demonstration of modern cancer research at the Crocker Laboratory, Amsterdam Avenue and 116th Street beginning at 10 30 o'clock. All are invited to attend this demonstration.

The short business session at the luncheon will be devoted to the annual election of the Advisory Council of the Society, the officers of the Council and the election of the Board of Directors. There will be a brief report of the past year's work by the Managing Director and a report of the year's receipts and expenditures presented by the Board of Directors. The officers of the Society, that is, the new President, Vice-President, Secretary and Treasurer and the members of the new Executive Committee will, according to the Society's By Laws, be elected by the Board of Directors upon a later occasion.

The luncheon will be presided over by President Howard Canning Taylor. The first of the two addresses will be "The Function of Health Departments in the Control of Cancer" and will be delivered by Henry Vaughan, Health Commissioner of Detroit and Past President of the American Public Health Association. Dr Vaughan is one of the best known authorities on public health administration in the United States and a member of the Special Committee of Cancer Control of the American Public Health Association whose report on "What Official Public Health Administrators Should Do About Cancer" was adopted by the American Public Health Association at its annual meeting at Cincinnati October 17 21, last.

The second address, entitled "What the Medical Profession Should Do About Cancer" will be delivered by Jonathan M Wainwright, M D, Chairman of the Pennsylvania Cancer Commission and a member of the Advisory Council of the American Society for the Control of Cancer. The Cancer Commission of Pennsylvania is older than the American Society for the Control of Cancer and has a commendable record of achievement.

MASSACHUSETTS GENERAL HOSPITAL

STAFF MEETING, MOSELEY MEMORIAL BUILDING, 1 HOUR
DAY, MARCH 8, 1928, AT 3 15 P M

(1) Some observations on a group of severely burned cases, with special reference to certain blood studies. Dr Henry H Faxon, East Surgical Resident.

(2) The Experimental Production of Abscess of the Lung. Dr Elliott C Cutler of Cleveland, Pres.

Professor of Surgery, Western Reserve University School of Medicine, Chief Surgeon Lakeside Hospital
Physicians, students and nurses are cordially invited to attend

NORFOLK SOUTH DISTRICT MEDICAL SOCIETY

A meeting for Medical Improvement will be held on Thursday March 1 1928, at 12 o'clock noon, at the Norfolk County Hospital

Mr Frank Kiernan Secretary of the Massachusetts Tuberculosis League will show a moving picture 'The Doctor Decides'

Dr Pillsbury will show another moving picture depicting the work of the Norfolk County Health Camp

D A BRUCE, M.D., *President*
N R PILLSBURY, M.D., *Secretary*

GREATER BOSTON MEDICAL SOCIETY

A regular meeting of the Society will be held on Tuesday, March 6 1928, at 8 15 P M at the Boston Medical Library

Program The Teachings of Freud
Speakers Dr Isador Coriat Dr Edward Willys Taylor, Dr Abraham Myerson

Discussion

All those who are interested are cordially invited
Refreshments

ROBERT SLATFIR M.D. *Secretary*
68 Bay State Road Boston Mass

SOCIETY MEETINGS

March 3—Annual meeting of the American Society for the Control of Cancer Detailed notice appears on page 1535 issue of February 9

March 6—Greater Boston Medical Society meeting Detailed notice appears above

March 8—Massachusetts General Hospital Staff Clinical Meeting Complete notice appears on page 114 of this issue

March 13 April 10—Massachusetts Dietetic Association For complete notice see page 1535 issue of February 9

June 18 22—Convention of the Catholic Hospital Association. Complete notice appears on page 1597 issue of February 16

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

May 2, 1928 (Wednesday)—Annual meeting at Haverhill 12 30 P M at the Haverhill Country Club Brickett Hill Gile Street, Haverhill

May 3 1928 (Thursday)—Censors meet for examination of candidates at Hotel Bartlett, 95 Main Street, Haverhill at 2 P M. Candidates should apply to the Secretary J Forrest Burnham M.D. 567 Haverhill Street, Lawrence at least one week prior

Essex South District Medical Society

March 7 (Wednesday)—Lynn Hospital Clinic at 5 P M Dinner at 7 P M

Dr Henry R Viets The Acute Infections of the Nervous System with lantern slides and moving pictures

Discussion by Drs W V McDermott of Salem and J W Trash of Lynn 10 minutes each and from the floor

April 11 (Wednesday)—Essex Sanatorium Middleton Clinic at 5 P M. Dinner at 7 P M

Dr Raymond S Titus 'Obstetrical Emergencies' Discussion by Drs J J Egan of Gloucester and A T Hawes of Lynn 10 minutes each and from the floor

May 3 (Thursday)—Censors meet at Salem Hospital for the examination of candidates at 3 30 P M. Candidates should apply to the Secretary Dr R. E Stone Beverly at least one week prior

May 8 (Tuesday)—Annual meeting Detailed notice appears on page 1437 issue of January 26

Norfolk District Medical Society

March 27—Meeting at the Norwood Hospital Presentation of paper or cases from members of the District.

May 3—Censors meeting Roxbury Masonic Temple 4 P M. Applications will be mailed by the Secretary upon request.

May 8—Annual meeting Details to be announced

Norfolk South District Medical Society

March 1—Norfolk South District Medical Society meeting Complete notice appears elsewhere on this page

Suffolk District Medical Society

Combined meetings of the Suffolk District Medical Society and the Boston Medical Library will be held at the Boston Medical Library 8 The Fenway at 8 15 P M as follows

March 28—Medical Section The Use and Misuse of Vaccines Dr Hans Zinsser Dr Francis M. Rackemann Dr Charles H. Lawrence

April 25—Annual meeting Election of officers Paper of the evening to be announced later

The medical profession is cordially invited to attend these meetings

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear

BOOK REVIEWS

Practice of Urology and Syphilology By CHARLES H CHETWOOD M.D. LL.D. F.A.C.S. Published by William Wood & Company New York. 879 pages Price \$9.00

This is the fourth edition of Dr Chetwood's text book on urology and brings methods of diagnosis and treatment up to date. The use of the newer drug preparations such as hexylresorcinol acriflavine and mercurochrome are discussed. Cystoscopic and urethroscopic methods are carefully described together with advances in operative technique. Attention is given to the application of regional anaesthesia to urology. The addition of from one hundred to one hundred and fifty new cuts makes this edition amply illustrated. The last hundred pages are devoted to syphilis.

This book gives an excellent survey of urology and is recommended as a text for students.

Healthy Growth A Study of the Relation Between the Mental and Physical Development of Adolescent Boys in a Public Day School By ALFRED A McFORD M.D. Published by Humphrey Milford Oxford University Press 1927 Pp 348 illus

In this volume the experience of the author as medical officer of the Manchester Grammar School for many years is drawn upon. He has attempted with a very considerable degree of success to establish standards for adolescent boys by which physical and mental adequacy can be tested.

It is of course out of the question to take up in detail the many methods of measurement. It is however obvious that this volume is the most complete study of the problem at present available. It is clearly written and adequately illustrated. In general the author sticks to his data with commendable energy. His theories as to what education is for and how it should be conducted are definite and clearly expressed but it is easy to separate facts from inferences and ideas. The volume should be of very real value to school physicians.

Textbook of Bacteriology and Its Applications CURTIS N HILLIARD Pp 329 Ginn & Company Boston. 1928

This small handbook of bacteriology endeavors to cover the fundamental aspects of the science and its more important practical applications from the point of view of a college course in bacteriology embracing not only that portion of bacteriology which falls within the field of medicine but, in addition its applications to household economics.

Two interesting chapters are those on food preservation. An interesting feature is an appendix giving important dates in bacteriology including agricultural bacteriology. It is to be regretted that in

the colored frontispiece the Gram negative gonococcus and Gram positive pneumococcus are apparently identical in color

This book, of course, being primarily for the special use of college students, is better adapted for them and for nurses than for the practitioner or laboratory worker

Poliomyelitis, With Especial Reference to the Treatment (Illustrated with 173 engravings) By W. RUSSELL MACAUSLAND, M.D. Boston Mass. Lea & Febiger—Philadelphia, Pa. \$5.50 net

The treatment of poliomyelitis as the title of this work states, constitutes its especial interest. Indeed one hundred and twenty four of its pages are devoted to the disease process known as poliomyelitis, and the remaining two hundred and sixty two pages deal with methods of therapy. In consequence the book is intended for those who take an active interest in the details of treatment, not for those who have an especial interest in the epidemiology, pathology, and diagnosis of the disease.

One is always interested in discovering the reasons which have prompted an author to write a book. In this instance the preface gives the need for a comprehensive account of the disease poliomyelitis as the chief reason. Another reason is the desire to set up standards of treatment and another, the necessity of indicating the principles upon which treatment is based. The author wishes to make these things clear and readily understandable. One feels that he has worthy and warrantable reasons for writing, and that he is to be congratulated on the simple manner in which he has proceeded to write his essay on poliomyelitis undoubtedly a most difficult and harassing task. Difficult because of the shifting sands upon which our knowledge of the disease has its slight foothold. Harassing because the methods of treatment are constantly changing. Nowhere in medicine is there less agreement as to the permanency of any clinical procedure than in the treatment of poliomyelitis.

As to the disease process itself, the author says in his preface that in spite of the fact that there has been no serious epidemic since 1916, nevertheless, and in truth, an extensive outbreak may occur at any time, a prediction and prophecy of sinister moment, because of the desolation caused by this disease. A community in the presence of a serious outbreak of poliomyelitis presents all the evidences of panic in its worst form. What to do, how to do it, and when to do it, are questions that the medical practitioners of the community must answer as best they may. One feels that the rather scanty knowledge which we possess is well enough presented in this book. Indeed its contents on the subjects etiology, bacteriology, pathology, and diagnosis should be the common knowledge of all practitioners of medicine. The author presents what is really known in concise and correct form. In so far as it goes it is good but in so far as it is lacking in specific knowledge it is more instructive. In other words, it is of value to realize how little is really known about the disease process called poliomyelitis. The summation devoutly to be prayed for is the discovery of enough knowledge about this disease to make the long exposition of methods of treatment of the paralysis unnecessary. This has happened with other disease processes. One is not finding fault with the author, but trying only to indicate his difficulties in writing a book on a subject the end of which is not yet to be estimated. Consequently the book contains that which should be read and known negatively as it is by the general medical public and laity.

When it comes to treatment that part which especially appeals to the author, we see set down explicitly most of the well known facts and well set

down at that. This part of the book concerns the orthopedic surgeon chiefly, and it is written for him and for the student in surgery who wishes to understand the technique of surgery as applied to the end results of this disease process. Of course there are slips of one kind and another, as for instance on page 122 the author states, "After six months, there is little return of muscle power and future disability may be fairly well estimated, and on the next page he says, 'Early neglected cases should not be disregarded, for they are capable of much improvement, even after years of disability'." On the face of it these two statements seem to disagree but in reality the fact they indicate is that the author has little reason for an arbitrary six months, unless he desires to have a clear conscience in recommending early surgical interference. Perhaps this is as it should be, or rather as it is, because we know so little really about the disease. Of course we have to treat it as best we can, and MacAusland's book tells much of how this should be done. One hesitates to agree that treatment can or should be standardized. Certainly, certain things should be done and universally done in the treatment of this disease especially in its acute stages. One cannot agree entirely in rules of thumb, nor in the belief that because a certain operative procedure has a present-day vogue it will be used at all in five years time—the history of too many operative measures proves this to be true. A flaw may be picked in the frequent recommendation of manipulation as a valuable procedure. One feels that the manipulative procedures recommended will not lead to the results implied, indeed some harm may result from their use.

On the whole, it is a well written book. It sets forth certain facts in admirable fashion and anyone who attempts to write a book on this subject will realize that the author has worked hard and long, and has produced a worthy volume. He is not to be blamed with our lack of knowledge. He has made excellent use of that which we have at our disposal.

Troubles We Don't Talk About By J. F. MONTAGUE, M.D. Pp. 241. J. B. Lippincott Company

The opening sentence of the preface is 'Here is a book such as has never before been published in the interest of public health'. From the way in which it is written it is rather difficult to see how it could be any great aid to public health. The book devotes itself to the discussion of rectal pathology. There are many worthwhile suggestions, but the whole book is such a glorification of the specialist in rectal diseases and so venomously critical of the general practitioner that it is a great pity such a book should be designed for lay readers. It is difficult to imagine any competent physician making this statement found on page twenty three, 'Examination by means of a gloved finger is foolishly insufficient'.

The writer is an ardent advocate of the injection treatment of hemorrhoids and cites with great gusto the evil results of other methods of treatment. One of the most cruel and grossly inaccurate statements in the book is this found on page sixty four, 'For even in the very worst form of cancer there is always a time during the first few months of its existence where cure is possible if proper treatment be started'. It may be that the writer feels that he is doing good by making such statements as this, but either his ignorance is colossal or he is deliberately attempting to deceive. Again on page sixty six we find a second indictment of rectal examination 'Mere examination of the rectum with a gloved finger is silly—it gives but little information and being incomplete is worse than no examination at all'.

It is too bad that a book which might have been worthwhile is spoiled by inaccuracies and obviously exhibited prejudices.

The New England Journal of Medicine

VOLUME 198

MARCH 8 1928

NUMBER 3

NEW ENGLAND BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION

CARCINOMA OF THE PROSTATE AND BLADDER*

BY B S BARRINGER, MD FACS

1 CARCINOMA OF THE PROSTATE

TO illustrate the futility of treatment of most cases of carcinoma of the prostate which come to us at Memorial Hospital I have classified 202 consecutive cases as to the duration of life after examination and treatment. These 202 cases were of all kinds: cases about to die, many cases post-operative, 4 cases with one or both legs swollen from the pressure exerted by carcinomatous glands on the common iliac vein, some few cases with very extensive bone metastases, many cases in which there was secondary carcinoma of the bladder, some cases showing carcinomatous signal nodes in the left supra-clavicular space, cases with large suprapubic tumors, these generally occurring after an attempt at prostatectomy. Of these 202 cases 18 were not followed to termination.

There were alive over 3 years, 15 cases.

Of these 15 cases 13 were classified as extensive—that is, the carcinoma was well beyond the prostate, and 2 classified as small, the carcinoma apparently being confined to the prostate. Of these 15 there was a pathological specimen in 10, and no specimen in 5.

Living over 4 years, 6 cases. 5 extensive and 1 small.

There was a pathological specimen in 2 and none in 4.

Living after 5 years, 6 cases. All extensive carcinoma proved by specimen, 2, not proved by specimen, 4.

Living after 7 years, 3 cases. 2 extensive and 1 small. Proved by specimen, 2, not proved 1.

Therefore there were but 30 cases (15%) that had any reasonable length of life after first examination and only a moderately small number of these extensive prostatic carcinoma were benefited by any treatment. In those cases with one or both legs swollen, from pressure of the carcinomatous glands, we have in most cases by the application of radium pack, caused a sufficient reduction of the swelling—complete reduction in some cases—to enable the patient to go in comfort the rest of his life, which is generally a question of months. In many cases we have stopped the hematuria. In certain cases we have

absolutely controlled the pain. One patient, an old gentleman of 80 odd years, has been enabled to live in comfort for over three years after he was refused any treatment whatsoever at another clinic.

One patient with multiple bone metastases has under deep X-ray treatment, gained in weight, radiation of his prostate has caused extraordinary regression of the tumor and his radio-sensitive carcinoma is being controlled. Another patient with a large carcinoma of the prostate was operated upon and a suprapubic tumor appeared shortly afterward. Two and a half years later after deep X-ray treatment he is reported to have gained 60 lbs. and his tumor has largely disappeared.

There is one class of patients in which much may be accomplished—that is the patients with advanced prostatic carcinoma and enough retention of urine to cause symptoms.

I have always tried to stress that the patient with extensive carcinoma of the prostate should never be subjected to major surgical operations, if it is possible to cope with the disease by any other means. It has been my habit to do a modified punch operation on such patients. This operation has been a minor one and can be done under local anesthesia but is generally done under a low spinal. I have classified 24 such operations as to result and duration of life after operation. There was one death from bleeding post-operative. The duration of life after operation was as follows:

13 lived less than 1 year
3 more than 1 year
3 more than 2 years
4 more than 3 years, and 1 unknown

The fact that 13 lived less than 1 year emphasizes the point that I wish to make, on the futility of doing major operations as routine upon this class of patients.

RESULTS OF PUNCH OPERATION

Results are divided into two classes. Those having complete retention and those having partial retention. If they are classified as well the retention has been entirely relieved. If they are classified as improved, the retention

is not entirely relieved, but the patient is enabled to get along without another operation

Complete retention, 9 cases

Well 2, improved 5, unimproved 1, unknown 1,

Another operation necessary 1, cystotomy

Partial retention, 15 cases

Well 5, improved 8, unimproved 2

Pathological specimens obtained at operation showed carcinoma in 20 cases, no carcinoma in 3, not done in 1

In other words, the retention is generally caused by the carcinomatous invasion but there may be inflammatory hypertrophy, or contraction of the bladder neck, both non-carcinomatous causing the retention

In the light of these statistics, what should our future activities be in attempting to control this extremely serious disease? I have elsewhere indicated that I believe between 5 and 10% of prostatic carcinoma can be sufficiently controlled by radium as to lead us to think that the patient is cured. We have had one autopsy specimen, a case proved carcinomatous by pathological examination, in which we could find no carcinoma

The steps in the future should I believe be along the following lines. Every man 55 years or older should have a rectal examination with the same regularity that he has his blood pressure, heart, urine, etc., examined. We have been making an attempt, in the past two years, to find some of the factors causing prostatic carcinoma. Dr. Ewing believes that the retention of irritating secretions and inflammatory changes play some part in both prostatic and breast carcinoma. At the Memorial Hospital they have been able to produce mammary carcinoma. At the Memorial Hospital they have been able to produce mammary carcinoma in animals, and Doctors Adair and Bagg believe that they have considerable evidence that retention and stagnation of secretions play a causative part.

We have attempted to reproduce their operations on prostates, but have not yet been able to produce a prostatic carcinoma in animals. If we could get an idea of the cause, then naturally we could attempt to prevent prostatic carcinoma from occurring.

Certain prostatic carcinoma, 5% or more, are radio sensitive—that is to say, they are profoundly affected by radiation either by means of radium, or X-ray. If the patient is in excellent condition, and has lost no weight, he should have one course of deep X-ray therapy to determine if his carcinoma is radio-sensitive. If it is, then there should be determined effort to definitely control the disease, no matter how bulky the carcinoma may appear to be. If the carcinomas are small, reasonably confined to the prostate, those of us who believe in radium should attempt to destroy that carcinoma by radiation. Those who believe in operation will

resort to operative removal. But I think we have enough evidence, both from the pathological specimens and the clinical findings, to show that operation very rarely removes all of the prostatic carcinoma. Therefore I think there is little question in any of our minds that operation should be followed by persistent radiation of the prostatic bed, and the lymphatics around the seminal vesicles.

For those cases having advanced carcinoma and urinary retention, some minor procedure should be done to overcome retention—minor, because at least $\frac{1}{2}$ of these patients will not live the year out.

CARCINOMA OF THE BLADDER

Turning to bladder carcinoma, we see some chance to become optimistic. We at least have a better idea of many of the problems than we had ten to fifteen years ago.

As to the end results, I have tabulated the end results of cases which have had an opportunity to go five years since then radiation—in other words, all cases up to the end of 1922.

These are divided as accurately as possible into papillary and infiltrating carcinoma. In both the papillary and infiltrating type there have been included some cases in which there are either no pathological examination, or the pathological examination did not—to my mind, reveal the true diagnosis.

In the majority of the cases, however, the diagnosis has been borne out by the pathological examination.

PAPILLARY CARCINOMA

20 cases reported. 12 of these are proved by pathological examination. 15 (75%) are cancer free. Of these 20 cases, 1 has been lost sight of (included in deaths).

2 are well 2 to 3 years, then lost sight of
2 are well 3 to 4 years,
1 is well 4 to 5 years,
5 are well 5 to 6 years,
2 are well 6 to 7 years,
2 are well 10 years,
1 is well 11 years

Of the deaths

1 died post operative from diabetic coma,
2 died at the end of 2 and 3 years from carcinoma,
1 died at the end of 10 years, possibly from carcinoma

INFILTRATING CARCINOMA

51 cases

Of these 51 cases, the pathological report agreed with the diagnosis in 23 cases. In 16 cases, the diagnosis was carcinoma, with no signs of infiltration, and in 12 cases there was no pathological examination, or the pathological diagnosis was papilloma.

18 cases (35%) are carcinoma free as follows

5 cases are well in which the pathological examination showed infiltrating carcinoma.

2 for 3 to 4 years,
1 for 5 to 6 years,
2 for 6 to 7 years

8 cases are well in which the pathological diagnosis was carcinoma

1 for 4 to 5 years,
5 for 5 to 6 years,
1 for 6 to 7 years,
1 for 11 years

5 cases are well, with no pathological diagnosis

2 for 3 to 4 years,
1 for 4 to 5 years,
1 for 5 to 6 years,
1 for 11 years

In one of the above cases a small papilloma occurred at the end of 5 years, this is under control. The deaths of patients who were free of carcinoma are as follows

2 at the end of 4 years, 1 of apoplexy, 1 of cardio-nephritis
1 at the end of 5 years of pneumonia
2 at the end of 6 years, 1 of kidney disease, 1 of apoplexy

Operative deaths

1 from uremia

Deaths from carcinoma, 32 cases

1 patient was lost track of and is included in the first year deaths,
16 died in the first year of carcinoma,
16 died at various periods, up to 5 years from carcinoma

To sum up, therefore, we have 20 cases of papillary carcinoma, 5 of which, or 75%, are cancer free for as long as observed, 11 having gone more than five years. 51 cases of infiltrating carcinoma, 18 of which, or 35%, are cancer free, 12 having gone more than 5 years.

In the above reported cases are included all those in which the carcinoma has been small enough to be controlled intravesically, and all cases operated upon suprapubically, and radium implanted. In this last class, no cases have been refused operation if the carcinoma was thought to be confined to the bladder. Many of the infiltrating cases have been very extensive, and most of them have involved the bladder base.

To determine the mortality of the suprapubic implantation of radium, I have tabulated the operations done up to the year 1927. These are my personal cases, as I believe that the cases done by one operator, in one way, will give a true record of what can be done.

In all, 94 suprapubic operations have been done upon 90 cases. On two of these patients I operated twice, and upon one patient, three times. The patient operated upon 3 times, is

cancer free, and has gone 7 years after the first operation. The other 2 are dead. These operations are divided as follows

Papilloma,	5 operations
Papillary carcinoma,	10 operations
Infiltrating carcinoma	79 operations

The deaths in the hospital (operative deaths) were as follows

Papilloma, 1 death 3 days post operative from hemorrhage (he had bled for weeks prior to the operation)

Papillary carcinoma, 1 death from diabetic coma, 3 months post operative (he had 5% sugar in his urine before operation)

Infiltrating carcinoma, 1 death from uremia 2 weeks post-operative (In this patient, the blood urea nitrogen was 42 mg before operation this rose to 120 2 days before death)

In the 94 suprapubic implantations of radium, there was a mortality of slightly over 3%. When we compare this with the mortality of between 10 and 20% of the operative removal of carcinoma of the bladder, we realize that even if radium removal were not more effective than operative removal we would by using the former, spare a goodly number of lives.

There is another point. Several surgeons who have a low operative mortality when excising bladder tumors have had a considerably higher mortality when radium has been implanted suprapubically. The reason for this is, I believe, that these bladders are mobilized with an idea of excising a tumor. Then when this is found to be impossible, radium is implanted. The length of such an operation, and the mobilization of the bladder are, I believe, the causes for the high mortality.

There are several points in the performance of the suprapubic implantation of radium that merit discussion.

1. The contents of the bladder, often badly infected, should not be spilled into the open wound. The best way to accomplish this is to empty the bladder by means of an aspirating device, padding the wound well and removing any soiled pads after the bladder is empty.

2. Cautey removal of protruding parts of the tumor accomplishes two objects. Bleeding is minimized, and infection controlled. This last point is valuable when the tumor is of the sloughy, badly infected type. The cautey used should be the quick heating electric type.

3. If the tumor is at all large, and if bleeding has been an important symptom, or if the bladder is badly infected, I object to sewing up the bladder without drainage. Instead, a rubber drainage tube is placed in the bladder and removed when bleeding has stopped or infection is controlled—generally in several days. The bladder is not sewed to the abdominal wound, but a silkworm stitch is placed in the

is not entirely relieved, but the patient is enabled to get along without another operation

Complete retention, 9 cases

Well 2, improved 5, unimproved 1, unknown 1,

Another operation necessary 1, cystotomy

Partial retention, 15 cases

Well 5, improved 8, unimproved 2

Pathological specimens obtained at operation showed carcinoma in 20 cases, no carcinoma in 3, not done in 1

In other words, the retention is generally caused by the carcinomatous invasion but there may be inflammatory hypertrophy, or contraction of the bladder neck, both non-carcinomatous causing the retention

In the light of these statistics, what should our future activities be in attempting to control this extremely serious disease? I have elsewhere indicated that I believe between 5 and 10% of prostatic carcinoma can be sufficiently controlled by radium as to lead us to think that the patient is cured. We have had one autopsy specimen, a case proved carcinomatous by pathological examination, in which we could find no carcinoma

The steps in the future should I believe be along the following lines. Every man 55 years or older should have a rectal examination with the same regularity that he has his blood pressure, heart, urine, etc., examined. We have been making an attempt, in the past two years, to find some of the factors causing prostatic carcinoma. Dr. Ewing believes that the retention of irritating secretions and inflammatory changes play some part in both prostatic and breast carcinoma. At the Memorial Hospital they have been able to produce mammary carcinoma. At the Memorial Hospital they have been able to produce mammary carcinoma in animals, and Doctors Adair and Bagg believe that they have considerable evidence that retention and stagnation of secretions play a causative part.

We have attempted to reproduce their operations on prostates, but have not yet been able to produce a prostatic carcinoma in animals. If we could get an idea of the cause, then naturally we could attempt to prevent prostatic carcinoma from occurring.

Certain prostatic carcinoma, 5% or more, are radio-sensitive—that is to say, they are profoundly affected by radiation either by means of radium, or X-ray. If the patient is in excellent condition, and has lost no weight, he should have one course of deep X-ray therapy to determine if his carcinoma is radio-sensitive. If it is, then there should be determined effort to definitely control the disease, no matter how bulky the carcinoma may appear to be. If the carcinomas are small, reasonably confined to the prostate, those of us who believe in radium should attempt to destroy that carcinoma by radiation. Those who believe in operation will

resort to operative removal. But I think we have enough evidence, both from the pathological specimens and the clinical findings, to show that operation very rarely removes all of the prostatic carcinoma. Therefore I think there is little question in any of our minds that operation should be followed by persistent radiation of the prostatic bed, and the lymphatics around the seminal vesicles.

For those cases having advanced carcinoma and urinary retention, some minor procedure should be done to overcome retention—minor, because at least $\frac{1}{2}$ of these patients will not live the year out.

CARCINOMA OF THE BLADDER

Turning to bladder carcinoma, we see some chance to become optimistic. We at least have a better idea of many of the problems than we had ten to fifteen years ago.

As to the end results, I have tabulated the end results of cases which have had an opportunity to go five years since their radiation—in other words, all cases up to the end of 1922.

These are divided as accurately as possible into papillary and infiltrating carcinoma. In both the papillary and infiltrating type there have been included some cases in which there are either no pathological examination, or the pathological examination did not—to my mind, reveal the true diagnosis.

In the majority of the cases, however, the diagnosis has been borne out by the pathological examination.

PAPILLARY CARCINOMA

20 cases reported. 12 of these are proved by pathological examination. 15 (75%) are cancer free. Of these 20 cases, 1 has been lost sight of (included in deaths).

2 are well 2 to 3 years, then lost sight of
2 are well 3 to 4 years,
1 is well 4 to 5 years,
5 are well 5 to 6 years,
2 are well 6 to 7 years,
2 are well 10 years,
1 is well 11 years

Of the deaths

1 died post operative from diabetic coma,
2 died at the end of 2 and 3 years from carcinoma,
1 died at the end of 10 years, possibly from carcinoma

INFILTRATING CARCINOMA

51 cases

Of these 51 cases, the pathological report agreed with the diagnosis in 23 cases. In 16 cases, the diagnosis was carcinoma, with no signs of infiltration, and in 12 cases there was no pathological examination, or the pathological diagnosis was papilloma.

18 cases (35%) are carcinoma free as follows

been established by the American Urological Association for the study of specimens of bladder carcinoma. You probably all know that this Bureau is located in the Army Medical School in Washington and if specimens are sent there with a history—and you can obtain blank forms from the curator by writing there—these specimens will be sent to three pathologists, and the opinion of each will be given as to the grade of malignancy, these records will be kept on file in the Museum, and in the future we may be able to know whether there is anything in the microscopic estimate of the malignancy of the tumor. My limited experience so far has led me to believe there is something in it.

In regard to the treatment of carcinoma of the prostate by the implantation of small gold seeds, I have tried that in a few cases in the past year or so, and two practical considerations have been brought to my attention. One is that when the patient is x-rayed after the seeds are implanted it is shocking to see where the seeds are. You will find two seeds lying side by side and then a long gap before you come to another one even though you have placed the seeds with your best ability.

The other is that even after a mild irradiation of the prostate by gold seeds there is a marked reaction and a local edema which makes the patient uncomfortable. All his bladder symptoms are increased and his difficulty of urination is increased, and this condition persists for at least six weeks and perhaps longer. I feel if one is going to treat carcinomas of the prostate in this way, probably the best thing to do is to open the bladder and under the guidance of the eye put the seeds in the prostate and then leave a tube in the bladder for two or three months to give the radium reaction time to clear up entirely before you allow the patient's bladder to close.

In regard to the treatment of carcinoma of the bladder I have been pretty much converted to the efficacy of the treatment by diathermy. It seems to me it is really a beautiful method of treating these things. One can get currents of varying types as Dr. Quinby has told us. At one extreme there is the radio knife which will go through tissue with such great rapidity that it has to be handled carefully, at the other is a current which will destroy the tumors more slowly and with a more penetrating effect. It seems to me this treatment cleans the bladder up and gives a slough that heals more quickly than after radium, and the results so far have seemed to be good.

I think that in the infiltrating tumors that lie in the bladder wall and do not extend through it, the implantation of radium is a better method than diathermy because if you use diathermy, you will burn a hole in the bladder wall and this may go through and cause a burn of the iliac artery, but radium can be used better in those cases provided it is screened. I

should be interested to hear how Dr. Barringer treats carcinoma of the prostate.

DR. WILLIAM C. QUINBY, Boston. We surely owe Dr. Barringer our conjoint thanks for working so persistently on these cases, especially of cancer of the bladder and prostate. It is only from such intensive work by a group of men that we are going to get any idea as to what the results of any single form of treatment will be.

I feel, as Dr. Chute said, rather hopeless as to what to do in a case of cancer of the prostate. There is nothing I feel I can do except to offer palliation of any presenting symptoms. If those are severe, then something must be done, especially if they are of the obstructive type and combined with hemorrhage. In such cases I do a partial prostatectomy through the perineum with the idea of relieving the urethra and bladder outlet as far as possible. Because I have it at my command I add radium, but I don't believe my experience with radium is sufficient to tabulate or to furnish trustworthy results. It is possible, however, to prolong life in a comfortable manner by the above treatment of such patients, that is, by a perineal operation that doesn't open the urethra but that relieves the neck of the bladder, followed by the implantation of radium into what malignancy remains.

As far as cancer of the bladder is concerned, I am becoming more and more an advocate of a radical procedure if the patient is of such type as to warrant it. By "radical" I mean an entire removal of the bladder rather than a local excision. I think if one doesn't find conditions such as to warrant a cystectomy, then by all odds the best operation is one that attempts to control the growth by diathermy through the open bladder. Once in a while, however, we will find that the late result of diathermy has occluded the ureter, and as many of these growths take origin in immediate proximity to the ureter we have always this problem to face, that our ultimate result will be threatened not only by recurrence of the growth but also by the extreme likelihood of a blocked ureter. It was said early in the use of diathermy that this agent in no way interfered with the ureter. That is not true. Any agent that destroys tumor cells will inevitably cause scar, and scar will contract, so that there may be an occlusion of the ureter on that side. Therefore for definitely malignant growths of the bladder with a patient in condition to warrant it I think that the operation of the future will be a total cystectomy.

In instances of malignant papilloma not too near the ureter I think that the treatment should be by electrical coagulation or fulguration. The excision of a neoplasm near the ureter with reimplantation of this tube into the bladder has shown discouraging results so often as to make

lower part of the bladder, so that it can be lifted up in case of need

4 Gold tubes of radium, of a strength of about 2 mc are implanted $1\frac{1}{2}$ cm apart throughout the base of the growth. This is the radium method of election, and rarely is any other form of radium used

5 We have a large and growing series in which bladder cancers have been controlled by the cystoscopic application of radium. This should not be attempted by one not experienced in the use of radium, and if there is any reason for doubt as to the control of a tumor, the suprapubic operation should be resorted to

DISADVANTAGES OF RADIUM

Gold tubes can cause just as much slough as the older glass seeds, although they generally do not. The slough generally occurs when radium seeds are applied to badly infected tumors, and may take a long time to pass off. It may become incrustated with phosphates. The gold seeds, as a whole, cause a great deal less irritation than glass seeds, but if 20 or more are implanted in the base of the bladder, rectal irritation may be considerable, and may last several weeks

DISCUSSION

DR A L CHUTE, Boston I have been very much interested in Dr Barringer's paper, especially in noting how not only has the enthusiasm of the operative group been toned down but how the radium group also has become much less enthusiastic than it was a few years ago as to its results, particularly in the treatment of malignant disease of the bladder and prostate. To me it is most difficult to determine what is the best treatment for cancer of the bladder with the exception of those small papillary growths that are so satisfactorily treated by the high frequency current and some of the localized growths that permit a wide resection of the tumor

I saw today the first patient who I thought had been helped definitely by the use of deep x-ray. This woman came to my office in 1925, at which time she had a ragged growth on one side of her bladder and I believed I could feel through the vagina a definite thickening of the bladder base. I advised her to submit to operation but instead she consulted Dr Samuel Ellsworth who gave her treatment with deep x-rays. She had had no treatment of any sort for a year and a half when she came in today. I looked into her bladder and found little papules and cysts scattered pretty well over the bladder base. Where the big tumor mass had been there was an area of scar tissue. In that area of scar tissue there was a little point which I think is the constricted ureter. This shutting off of a ureter is, I believe, the weak point in all our treatment of bladder growths by radiation as well as by surgery, many of these patients die

of uremia because their ureters are shut off, as proven by autopsy findings

This woman had, I should judge from what I saw, two years ago, an infiltrating carcinoma of the bladder. As there was no microscopic specimen, the diagnosis was purely clinical. Today it looks as if the growth had been changed to a mass of scar tissue, in which the right ureter is imbedded with the result that the right kidney is thrown out functionally

There are many small, papillomatous tumors of the bladder that I think we will all concede are best treated by fulguration through a cystoscope. There are others so extensive that we can do little more than to provide drainage as a means of palliation. In the operable cases there are two essentials that we must follow if we are to have success: we must remove all the diseased tissue and keep the ureters patent. I believe we can be most sure to accomplish this by means of operative surgery, fulguration and radium may destroy the diseased tissues but they take no account of the patency of the ureters. In some instances the mutilation that accompanies the operative removal of all diseased tissue is so great that we hesitate to employ it until the disease has gone beyond the bladder, even though as a whole, these cases do not metastasize early. To preserve the patency of the ureters will mean in many instances implanting them in the intestines or the skin.

In closing I wish to mention briefly a case of carcinoma of the prostate. Last New Year's day I saw a man on whom I had operated for carcinoma of the prostate six years ago. When I saw him he had a clear urine and no frequency or urinary symptoms. I could feel absolutely nothing in the way of infiltration of the prostatic region, but he had numerous foci of carcinoma of the bones. If I interpret this correctly, I had removed all the local disease but not before metastasis had taken place. In a way this case is encouraging in that it suggests that one may be able to remove all the carcinomatous tissue. No radium was used in this patient because the septum between the bladder and rectum was so thin I felt sure that I would get sloughing if I used it.

DR. GEORGE G SMITH, Boston I enjoyed hearing Dr Barringer's paper very much but I wish he would give us more information about his method of treatment. I presume he uses gold implants and leaves them there—Is that right?

DR BARRINGER No

DR G G SMITH I think we have a good deal of ground to cover in discovering the malignancy of these tumors. For instance, a carcinoma of the prostate will behave in one way in one case and an apparently similar carcinoma in another case will behave entirely differently. I would like once more to call to your attention in this connection the Bureau which has

eventful On March 1 he was allowed to go home carrying a 5 to 6 oz residual for which he was advised to catheterize himself from time to time This residual remained the same for 2½ years when we saw him again. He reported then that he had had for 6 months quite a little frequency and pain more referred to the rectum and he had to strain a good deal both for bowels and urination At this time also he had nocturia 6 times He was catheterized and 7 ounces of turbid residual found Cystoscopy showed small stones in his bladder His blood pressure was back to 200/110 He was advised hospital treatment which he accepted, and under low spinal the stones were crushed and washed out of his bladder A catheter was tied in for three days and then he was catheterized night and morning for a number of days getting between 7 and 10 ounces of residual each time This gradually came down to 4 ounces after a few months under his own catheterization We felt that he probably had to do this permanently as his bladder wall showed multiple diverticula openings

Nothing was heard from this patient until July 26 1927 when he reported that he was having a great deal of difficulty in passing small bits of calcified material His pulse rate was increased and he had a systolic murmur at the apex There was no evidence of stone made out He was advised to go into a hospital which he did not do until October 1927 when he came in with 10 ounces of very turbid bloody residual He was nauseated distended and drowsy He was given suptorals and a number of enemas Renal function showed no dye at all His NPN even following a number of suptorals was 171.4 mg He died Oct 26 1927

Autopsy Fair amount of distension and gas noted in intestines Right kidney was palpated very small, it was freed up pedicle tied Ureter was followed along to bladder noting moderate dilatation of the last third near bladder The left kidney was possibly a little larger than normal it was quite nodular and studded with small abscesses the ureter was dilated nearly as large as thumb with small areas of constriction there was also extra renal dilatation Bladder was then freed and removed in freeing the bladder low down on the left side a lot of pus was evacuated, about half a cupful When I got this bladder out I found that where the pus had come from was where I had ruptured through into a diverticulum which contained a stone as large as a small plum Bladder opened there was a great amount of trabeculation and thinning of the bladder wall between these hypertrophies The opening of the diverticulum was noted and the stone seen the ureteric orifice of this left side was found and a hairpin was passed into it it was shown by this that it was inside and below the diverticulum opening and had nothing to do with it whatsoever pus was evacuated and at the lower end of the ureter there was noted a lot of fine gravel and a couple of moderate sized stones The ureteric orifice on the right side was easily noted and another hairpin was passed through

This second case is interesting because of the symptoms presented when we first saw the man He complained of great discomfort in the left thigh and some frequency For one and one-half years he had had some difficulty with urination and in March or April of 1927 he entered a hospital where he was advised to have a prostatectomy done The pathological report of this was a benign prostate Following the prostatectomy he did not have much difficulty He left the hospital the latter part of April or early in May In June or thereabouts he attracted attention in the Out Patient by speaking of pain and distress in his left thigh It was suggested that he had a phlebitis and he was told to take care of it This swelling of the thigh continued as well

as pain and incontinence He entered the hospital on October 1 under our care for the first time Examination showed a swollen left thigh, possibly one third larger than normal His color was very poor NPN 71.4 mg he was running a slight temperature and he looked perfectly wretched An attempt was made to cystoscope him but he hied easily and could not stand the pain so it was not done Under spinal he was later cystoscoped and a huge, sloughing mass papillary in character was noted As he hied so easily the exact dimension could not be made out and a cystogram was made which showed a definite deformity on the left side He was put on catheter drainage which caused even more irritation He was given sedatives to relieve the pain in his left thigh, which showed some distension of the superficial veins He was advised to have a suprapubic cystostomy if the pain became too acute but he gradually became weaker and passed away on October 21 having been under a great amount of sedatives for the previous 10 days

Autopsy Enlarged kidney on right side smaller than normal on left side On the left wall and bladder base a definite mass was felt, the rest of the bladder felt very soft The bladder was shelled out with the ureters The ureter on the right side was normal Bladder opened and on the posterior wall just behind the ureteric ridge was a surface twice as large as a silver dollar large raised papillomatous and soft with an infiltrating base some prostatic tissue noted on the right side but not very much Bladder outlet looked all right Ureter openings were not noted in bladder Long chain of glands anterior to spine two of these seemed nodular removed for pathological examination Involving the bifurcation of the iliac vessels on left was a huge, infiltrating mass from where bladder had been freed It was about size of lemon It apparently surrounded both the iliac vein and artery and probably caused most of man's pain certainly was what caused phlebitis on this side

Pathological examination On October 22 received a tumor of the bladder a pelvic lymph node and small pieces of liver from your patient It is a papillary growth of the bladder The pelvic lymph node is hard and is the size of a hen's egg Two pieces from the liver contain several pin head sized opaque areas

On microscopic examination the tumor of the bladder is composed of large irregular clusters of undifferentiated epithelial cells invading the muscular walls The large pelvic lymph node contains a large metastatic deposit of this tumor The liver contains small areas of degeneration There is no evidence of metastasis in it

Diagnosis Carcinoma of the bladder with metastases in the pelvic lymph nodes

THE PATHOLOGY OF THE RENAL PELVIS IN A CASE OF ESSENTIAL HAEMATURIA*

BY BANCROFT C WHEELER, M D

THE number of cases of haematuria which I have had to be classified as "essential" or "idiopathic" has been steadily diminishing as the accuracy of urological diagnosis has improved There are still, however, instances in which the nature of the pathological process in a kidney which is found to be bleeding is not entirely understood, and where complete examination of such a kidney is possible the findings are of some interest in this connection The following is such a case

From the Urological Clinic of the Peter Bent Brigham Hospital Boston Mass

this type of operation probably unwise in most instances

DR R F O'NEIL, Boston I should like to add my thanks to the others to Dr Barringer for his paper, and I admire his persistence in following this line of work, and the results he has obtained

My personal experience with radium in Prostatic Carcinoma is too limited for me to discuss that procedure If retention or marked obstruction is present it should be dealt with by perineal operation or suprapubic drainage

In carcinoma of the bladder I have had better success with diathermy than with radium implantation In one case in particular a tumor in close relation to one of the ureter openings was treated by this method by open operation Two years later cystoscopy showed a normal bladder and a normal appearing ureter The pathological examination in this case was carcinoma of high malignancy

The futility of operating on many of these cases of carcinoma of the bladder is so often demonstrated by the prompt recurrence and extensive metastases Still we must persist in removing them when possible in the hope of getting an occasional early case

I have recently had under my care a case where an extensive and locally successful resection of the bladder had been performed, only to have the patient die one and a half years later of extensive metastases of the spine and pelvic bones

DR BENJAMIN S BARRINGER, New York (closing) I am sure you have all been very gentle with me to-night I think we are getting nearer together

Dr Smith asked about the treatment of prostatic carcinoma I have always had an idea that the putting in the needles and pulling them out was the best way, as it gave the largest amount of irradiation with the least pain

We have found by animal experiments and clinical work that this form of radiation gives a considerably wider effect than the radiation by means of gold seeds So we give a man anesthesia and put a needle into both lobes of the prostate and needles around both vesicles, and give him several hundred millicurie hours, and then pull the needle out Some get pain, and some not, but all in all they get less pain than with the gold seeds and they get a larger area of radiation

Diathermy I think is simply another form of heat, perhaps a rarefied form, but nevertheless heat—and the effect is largely that obtained by a cautery

Now the cauterization of carcinoma has been placed in the discard. Percy used to burn out carcinoma of the uterus There are few people in the United States that do that now I have an idea that the real therapy lies between operation and radium and that if you are using dia-

thermy you are puttering with your condition

The occlusion of the ureters was an interesting thing to me Radium doesn't occlude the ureters, but does another interesting thing A man in whom I had cured a carcinoma of the bladder came back with one kidney that was practically destroyed, and whether the slough around the ureter had so infected the kidney as to cause destruction of it, I don't know, but the kidney was gone, and the ureter was not occluded I have seen a case that had ureteral colic have the colic cease after radium implantations of a tumor around the ureter I don't know that I have seen scars around the ureter occluding it after radium implantation

About total cystectomy I cannot get into my mental make-up that any operation that entails a mortality of 30 to 50 per cent, that makes a patient miserable afterwards, and in which there is no guarantee of cure of the carcinoma, can be of any use

Somebody asked about the pathology of the obstructing prostate I think in 21 out of 24 of the punch operations we got carcinoma, and it is generally the carcinoma which caused the punch obstruction

DR CHUTE Dr Barringer spoke about several millicurie hours, I was interested to know

DR BARRINGER If you have a lobe as big as the end of your finger, that will stand 300 millicurie hours, and then in two or three months, I do it again If he has any lumps left—and it is only by the persistence of doing it every three months for the first year that you get results, radiate there again, giving 200 to 300 millicurie hours, according to the size of the lumps

Dr Barringer given a rising vote of thanks by the Society

Adjournment

PYELONEPHRITIS WITH URINARY CALCULI AND CARCINOMA OF BLADDER FOLLOWING PROSTATIC OBSTRUCTION—TWO AUTOPSY REPORTS

BY B D WETHERELL, M.D., F.A.C.S

The first case to be presented is a man of 73 first seen in Dr Chute's office in November 1923 with a large, elastic prostate Urine was extremely pale very low specific gravity showed some pus B P was 220/140 His bladder was emptied by very gradual decompression NPN in December was 41 mg renal function showed no dye the 1st hour, 9% the second hour After continuing in this way for a couple of weeks his blood pressure dropped to 130/70 and after 3 weeks his bladder was practically empty He then showed no dye the 1st hour and 3% the second Two weeks later the function test had remained the same In the middle of January his NPN was 40 mg, renal function was 5% the 1st hour and 8% the second His condition was then thought to be fair enough to try a perineal prostatectomy under sacral which was done on January 24 1924 His convalescence was more or less stormy due to nausea hiccuping and he had to have subpectorals and a number of enemas Outside of this his convalescence was un-

Dilated thin walled capillaries and veins were present in large numbers close beneath the pelvic epithelium at the tip of the pyramid and there were numerous extravasations of blood cells into the submucosa and peripelvic fat. In some places there was absence of the endothelium of the capillaries and in one spot rupture of the pelvic epithelium. With the blood there was also a considerable chronic inflammatory infiltration with round cells particularly into the fat. This was present to a less extent in a section through the adjacent papilla.

TUMORS OF THE KIDNEY

A REPORT OF THREE CASES*

BY VINCENT VERMOOTEN, M.D.

THREE renal tumors were recently seen in Dr. Quimby's Clinic at the Peter Bent Brigham Hospital which it was thought were of sufficient interest to report.

The first because of the great rarity of the tumor which was a very rapidly growing fibrosarcoma of the kidney occurring in a man thirty-four years of age.

The second because although the patient was seventy years of age she had apparently had a five-year cure of a nephroma and recently returned with a second malignant tumor of the urinary tract in the form of a malignant papilloma of the bladder.

The third, also a nephroma but of interest because it occurred in a young girl only sixteen years of age, the most common age incidence for these tumors being between fifty and seventy years.

CASE REPORTS

CASE I. B. P. a man thirty-four years of age was referred to the Peter Bent Brigham Hospital on account of haematuria and pain in the left side. On Labor Day of this year the patient had painless haematuria for twenty-four hours which cleared readily but recurred about twelve days before his admission to the hospital on October 31, 1927. Shortly after the onset of this recent attack of haematuria the patient experienced rather severe pain in the region of the left kidney which necessitated his going to bed and receiving several doses of morphia before obtaining relief. From then till the time of admission he had a persistent dull ache in the left upper quadrant of the abdomen. No urinary or other symptoms were present although the patient claimed to have lost twenty pounds in weight during the previous three months.

On physical examination the patient was a well developed man of early middle age who did not look acutely ill but showed evidence of rapid recent loss of weight. The heart and lungs were clear. Abdominal examination revealed a large tumor mass in the region of the left kidney which extended from the level of the umbilicus upward to disappear under the costal margin and from the lateral abdominal wall to the midline. It moved only slightly with respirations. The surface was smooth, the consistence firm and the percussion note over it tympanic for the most part.

On cystoscopic examination the bladder was nor-

mal and both ureters were readily catheterized. The only specimen that could be obtained from the left side was about 2 cc of dark brown watery material resembling old hemolyzed blood. A left pyelogram (Fig. 1) revealed a large mass distorting the kidney pelvis.



FIG. 1. This pyelogram shows the marked distortion of the left renal pelvis due to an actively growing fibrosarcoma of the kidney (Case I).

At operation a large tumor weighing 2700 grams and measuring 25 cm length and 18 cm in its greatest diameter was found in the place of the left kidney. This was removed transperitoneally with some difficulty as it occupied the entire upper left half of the abdominal cavity and overlaid the aorta and vena cava. Except for rather persistent hicoughs and moderate abdominal distension during the first two postoperative days the patient's convalescence was uneventful.

Grossly the tumor invaded the small remaining portion of the kidney which seemed to cap it. The tumor itself appeared to be lobulated. Around the periphery the lobules consisted of firm greyish translucent masses of tissue 2 to 5 cm in diameter whereas in the center there were much necrosis and hemorrhage.

Microscopically (Fig. 2) all the sections showed a uniformity of appearance. The tumor was composed of small spindle cells which were invasive and contained numerous mitotic figures. The only arrangement was that produced by the different directions in which the cell bundles ran that is in every possible direction. When cut longitudinally the nuclei appeared very much elongated with rather scanty spindle-shaped cytoplasm. There was very little intercellular substance present although at a few places there was a definite amount of material staining like collagen. The cells themselves had very definite fibrils so that they seemed to represent fibroblasts. In general the appearance of the tumor as a whole was identical with that of the non-epithelial elements of an embryoma of the kidney.

CASE II. E. O. C. a white woman seventy years of age was first admitted to the Peter Bent Brigham Hospital five years ago with the history that

*From the Urological Clinic, Peter Bent Brigham Hospital, Boston, Mass.

A Jewish woman of twenty-two entered the Peter Bent Brigham Hospital on October 14, 1927 complaining of painless haematuria. The family and past history were negative. She had first noticed blood in the urine two years previously. Shortly afterwards she went to the Massachusetts General Hospital, where on cystoscopic examination blood was seen to be coming from the right ureteral orifice. A pyelogram on the right showed an apparently normal pelvis. She was advised to have an operation at this time but refused. She bled intermittently, but more of the time than not during the next two years, the longest period of freedom from bleeding being about three weeks. At times there

X-ray plates showed no shadows which could be interpreted as calculi. A pyelogram on the right showed a pelvis normal in size and outline, but containing a vague negative shadow about 1 cm in diameter. This was thought to be possibly an intra-pelvic papilloma or a blood clot. Operation was decided upon because of the marked anemia and the fact that the bleeding had been from the same kidney two years before.

At operation on the 28th of October after a transfusion of 500 cc, the right kidney was exposed and found to be freely movable. It presented no gross evidence of abnormality. The pelvis was opened posteriorly and a non-adherent blood clot

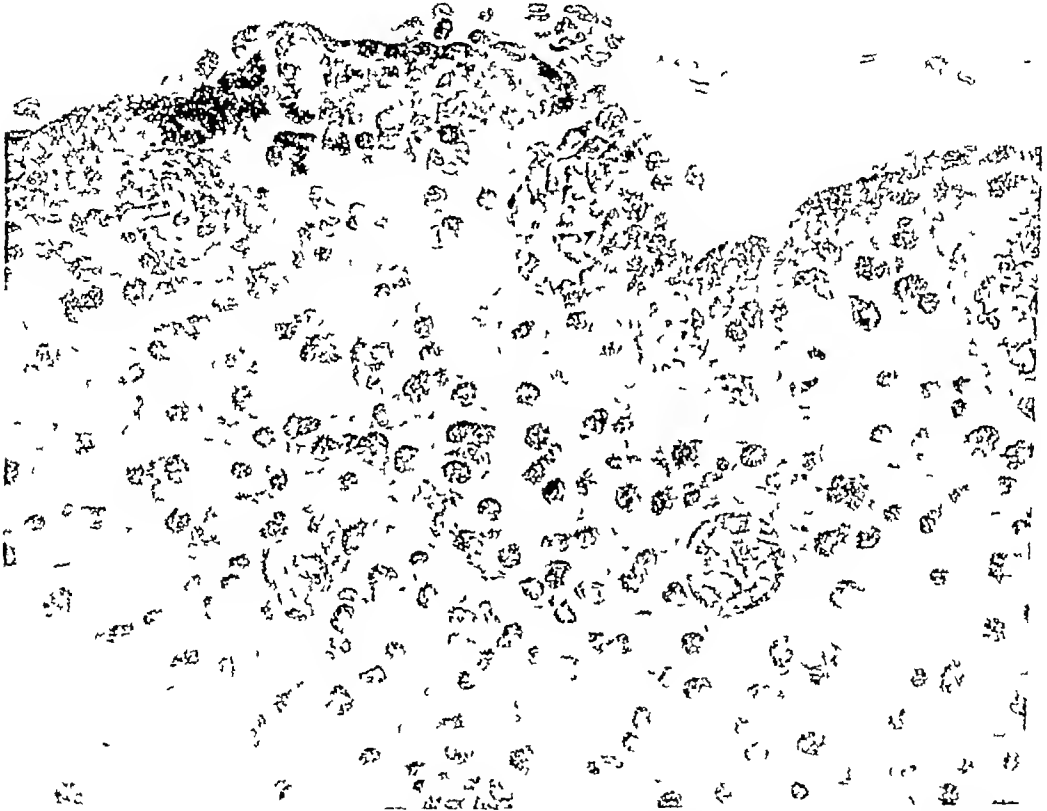


FIG 1 High power showing thin walled dilated capillaries close beneath pelvic epithelium. Two of these appear to be about to rupture into the pelvis. There is a moderate amount of leucocytic infiltration of the submucosa. Section is taken from near the tip of the papilla.

were moderate sized clots in the urine but never any frequency pain or dysuria. During the three months preceding entry to the hospital she had noticed loss of strength, dyspnea on exertion and increasing pallor. She had been on a liver diet during the latter part of this time.

On admission she was seen to be markedly pale, and the skin was yellowish. Neither kidney could be felt and there was no abdominal tenderness. The temperature and pulse were normal. The urine was grossly bloody. The red blood count was 1,670,000, haemoglobin 35%, blood pressure 105/65. Her 2-hour phthalein excretion was 60% and BUN 12 mgms.

Cystoscopic examination a week after admission showed a normal bladder. Bloody urine was seen to come from the right ureteral orifice and clear jets from the left. Catheters passed readily the full distance up both ureters and the specimens confirmed the finding of blood from the right. The urine from the left side was clear and negative.

about 1 cm in diameter removed. The inside of the pelvis was then irrigated with saline solution and a steady blood stained return obtained. Through a large incision however no source for the bleeding was found. The epithelium appearing everywhere normal. The kidney was removed because of the history of persistent haematuria.

The patient has made an uneventful convalescence and there are no red cells present now in a catheter specimen of urine.

Examined grossly, the kidney was not abnormal in appearance except for its pallor. On section, the architecture was clear and there were no cortical hemorrhages. The pelvis was normal throughout except for one papilla. The tip of this, about the size of the head of a black pin, consisted of a raised, granular, reddish material from which blood oozed on pressure above. All the other papillae were normal.

Microscopically again the abnormal findings were practically limited to the region of this one papilla.

round cells were seen in the bladder wall, although in the sections examined there was no definite break through the basement membrane.

At operation the tumor was readily exposed through a suprapubic opening and was seen to be about 3 cm in average diameter. It had a cauliflower-like appearance with a broad pedicle and with some induration of the bladder wall about it. The right ureteral orifice was entirely covered by the

painless haematuria for several days ten months before admission. This cleared up spontaneously and the patient was apparently well again until two days previous to admission when in the morning she noticed her urine to be bloody. Three hours later she had very severe pain in the left costovertebral angle which radiated through to the front. This was partially relieved by morphia but was present with exacerbations for the next 48 hours.

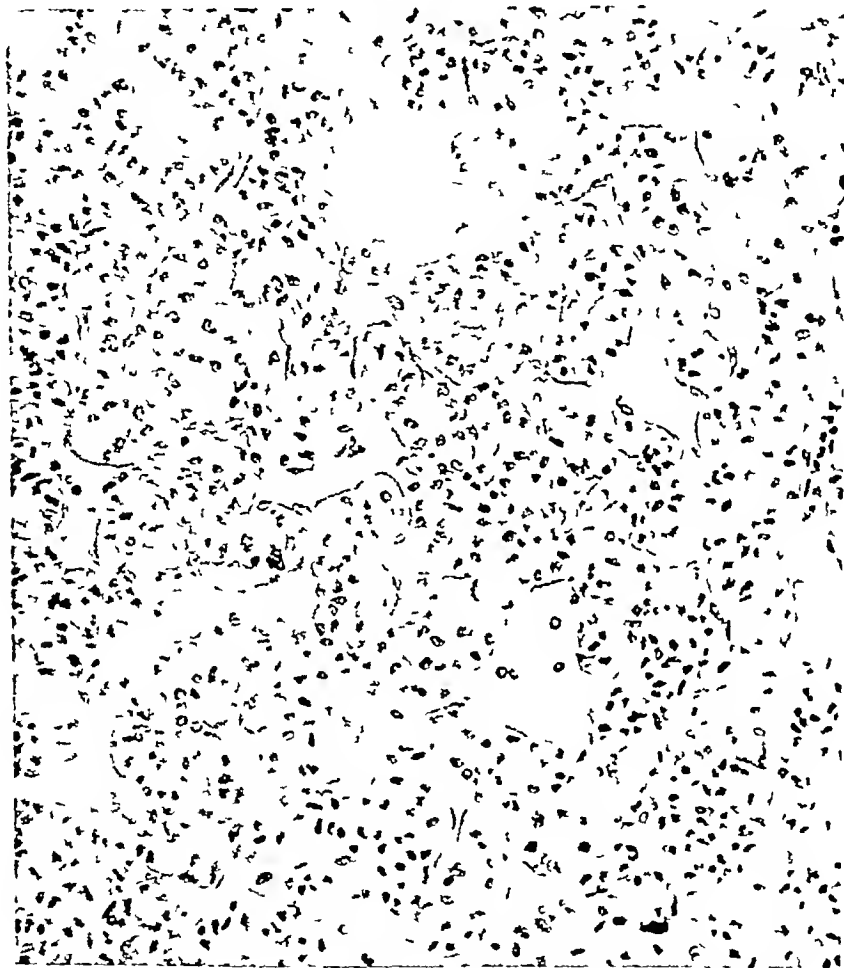


FIG III Photomicrograph of a portion of the nephroma described in Case II showing the long anastomosing strands of large relatively clear cuboidal cells with small pyknotic nuclei.

growth. The tumor was destroyed by diathermy and then radium implanted around the periphery.

The convalescence was rather stormy due chiefly to swelling and oedema about the intramural portion of the ureter which prevented any urine from being excreted into the bladder for the first sixty hours after operation and again for eighteen hours three or four days later. During this time the patient was rather drowsy and at times irrational although the urea nitrogen in the blood did not go above 48 milligrams per 100 cc of blood. At the end of four weeks the patient was once more up and about with the suprapubic wound healed and excepting for some frequency of urination was apparently perfectly well.

CASE III is that of a girl sixteen years of age who was admitted to the Peter Bent Brigham Hospital on October 28 1927 with the complaint of blood in the urine. She gave a history of having had

after which time the pain subsided and the urine became grossly free from blood. Associated with this the patient had no urinary symptoms of any kind.

Physical examinations showed an apparently healthy girl of sixteen with normal vital signs. On abdominal examination the lower poles of both kidneys were just palpable but no apparent variation from the normal was noted. The remainder of the physical examination was also within normal limits.

On cystoscopic examination the bladder was not remarkable and both ureters were readily catheterized. A pyelogram (Fig V) was made on the left side which revealed a markedly irregularly flattened-out upper calyx with compression of the middle calyx suggesting a tumor in the upper pole of the kidney.

At operation a kidney containing a tumor in the upper pole was removed transperitoneally without a great deal of difficulty. Convalescence was un-

she had had painless haematuria for several days three months before admission. She also had a dull ache and some discomfort in her left flank, otherwise she was asymptomatic.

The physical examination at that time showed the patient to be a well developed and well nourished, elderly woman with some hypertension and excepting for a palpable intra abdominal mass about 6 cm in diameter, which the patient claimed she had noticed for the previous ten years, was not ab-

large, cuboidal in type with a large amount of relatively clear cytoplasm and small pycnotic nuclei, resembling the cells of the adrenal cortex. The cells were arranged in long strands which anastomosed with one another and were supported by a very thin stroma.

The patient returned to the hospital on September 24, 1927, five years after her previous operation complaining once more of painless haematuria with clots.

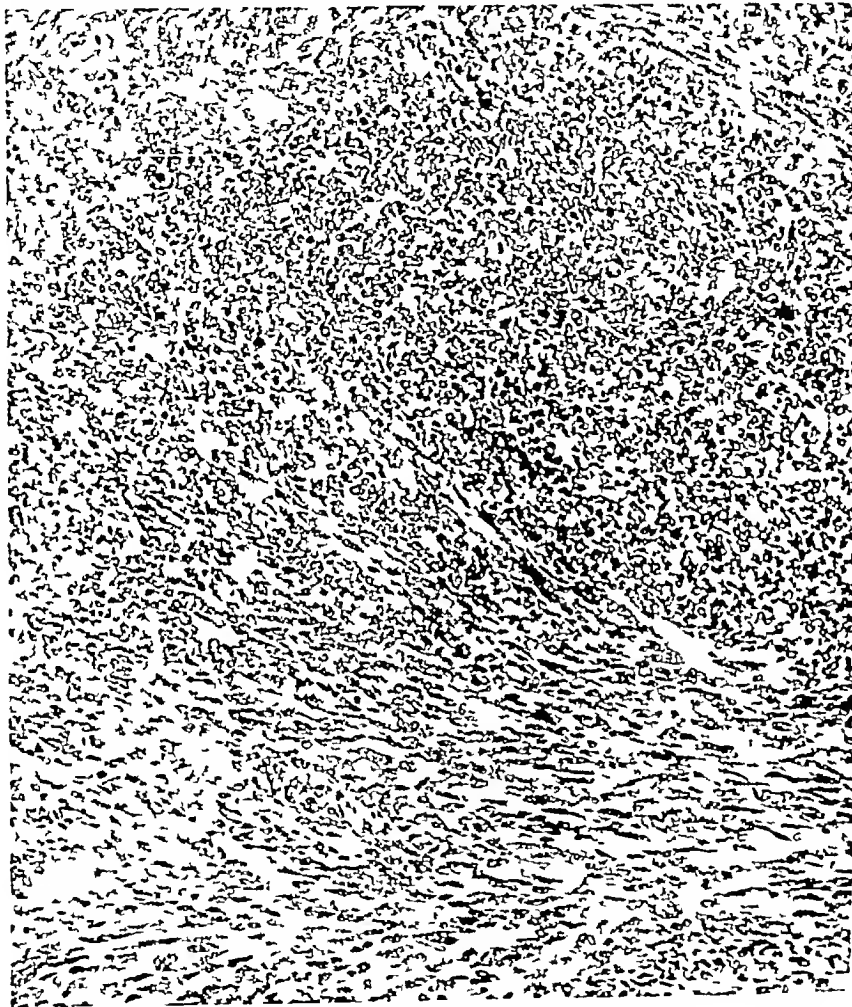


FIG II Photomicrograph showing the detailed structure of the fibro sarcoma of the kidney (Case I). The bundles of spindle cells are seen running in all directions so that they are cut at various angles. Many mitotic figures are also present.

normal. The mass moved during respiration and seemed to be attached to the lower pole of the left kidney.

On cystoscopic examination the bladder was normal and both ureters were readily catheterized but the sodium iodide injected into the catheter on the left side failed to enter the renal pelvis.

At operation a kidney with a tumor in its lower pole was readily removed through an incision in the flank.

Grossly a well circumscribed tumor 4.3 cm in average diameter was found occupying the lower pole of the kidney and encroaching upon the pelvis. The tumor presented a variegated appearance consisting of yellowish pink nodular areas interspersed with greyish white, retracted tissue.

Microscopically (Fig III) the tumor cells were

Physical examination was essentially as it was five years ago except that in place of a palpable mass in the left flank the patient now had a well healed scar. Her lungs were clear to percussion and auscultation and a roentgenogram of the chest showed no evidence of metastases.

Cystoscopic examination revealed a sessile papillary type of tumor rather large in size overlying the right ureteral orifice but otherwise not abnormal. A biopsy done with the Young's cystoscopic rongeur showed the tumor to be a malignant papilloma of the bladder.

Microscopically (Fig IV) the capillary arrangement of the tumor was readily seen. The individual papillae were frequently fused. Large numbers of mitotic figures were present and groups of epithelial cells, surrounded by a dense infiltration of small

round cells were seen in the bladder wall although in the sections examined there was no definite break through the basement membrane.

At operation the tumor was readily exposed through a suprapubic opening and was seen to be about 3 cm. in average diameter. It had a canli flowerlike appearance with a broad pedicle and with some induration of the bladder wall about it. The right ureteral orifice was entirely covered by the

painless haematuria for several days ten months before admission. This cleared up spontaneously and the patient was apparently well again until two days previous to admission when in the morning she noticed her urine to be bloody. Three hours later she had very severe pain in the left costo-vertebral angle which radiated through to the front. This was partially relieved by morphia but was present with exacerbations for the next 48 hours

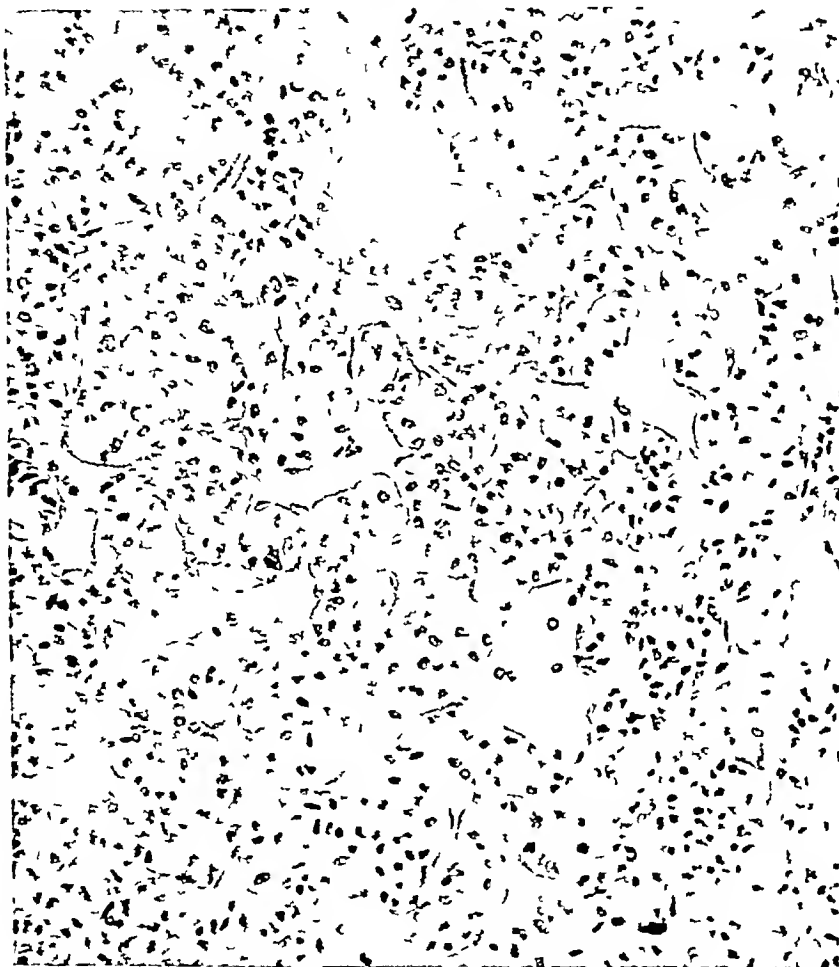


FIG. III. Photomicrograph of a portion of the nephroma described in Case II showing the long anastomosing strands of large relatively clear cuboidal cells with small pyknotic nuclei.

growth. The tumor was destroyed by diathermy and then radium implanted around the periphery.

The convalescence was rather stormy due chiefly to swelling and oedema about the intramural portion of the ureter which prevented any urine from being excreted into the bladder for the first sixty hours after operation and again for eighteen hours three or four days later. During this time the patient was rather drowsy and at times irrational although the urea nitrogen in the blood did not go above 48 milligrams per 100 cc. of blood. At the end of four weeks the patient was once more up and about with the suprapubic wound healed and excepting for some frequency of urination was apparently perfectly well.

CASE III is that of a girl sixteen years of age who was admitted to the Peter Bent Brigham Hospital on October 28, 1927 with the complaint of blood in the urine. She gave a history of having had

after which time the pain subsided and the urine became grossly free from blood. Associated with this the patient had no urinary symptoms of any kind.

Physical examinations showed an apparently healthy girl of sixteen with normal vital signs. On abdominal examination the lower poles of both kidneys were just palpable but no apparent variation from the normal was noted. The remainder of the physical examination was also within normal limits.

On cystoscopic examination the bladder was not remarkable and both ureters were readily catheterized. A pyelogram (Fig. V) was made on the left side which revealed a markedly irregularly flattened-out upper calyx with compression of the middle calyx suggesting a tumor in the upper pole of the kidney.

At operation a kidney containing a tumor in the upper pole was removed transperitoneally without a great deal of difficulty. Convalescence was un-

eventful the patient being up and about two weeks after operation

Grossly the tumor measured 8 cm in average diameter. It seemed to be well circumscribed and when cut bulged out of its capsule. It was for the most part yellowish in color with some necrosis in the center from which depressed strands of greyish tissue extended peripherally.

Microscopically (Fig VI) the tumor was found to

the embryonal type of tumor described by Wilms which in addition to the connective tissue cells frequently contain nests of epithelial cells as well as muscle and definite myxomatous tissue. By far the majority of renal embryomata occur before the age of three although Hedden reported a bilateral embryonal adeno-



FIG IV. Photomicrograph of a section of the malignant papilloma of the bladder (Case 11) showing the fusion of the papillae, mitotic figures and nests of epithelial cells beneath the mucosa surrounded by large numbers of small round cells.

be composed of large cuboidal and columnar cells with much coarsely granular cytoplasm and small darkly staining nuclei. Many mitotic figures were present. The cells for the most part assumed an alveolar arrangement and in places resembled the tubules of the kidney.

COMMENT

The first case presents a most unusual type of kidney tumor in so far as it is apparently a pure fibrosarcoma of the kidney. A careful search was made through a large number of sections taken from various parts of the tumor but no epithelial or other elements were found.

The majority of tumors of this type occur as

myosarcoma in a man fifty-four years of age. Our patient is thirty-four.

Our last two tumors have been called "Nephromata" in accordance with Young's nomenclature. We have found that there are very few of these renal tumors of epithelial (or endothelial) origin that are entirely uniform in their appearance. The cells and cellular arrangement of some tend more to resemble the characteristics of the adrenal cortex as in the second case, whereas others take on the tubular arrangement of the kidney epithelium as in the third case, in which, too, there are large areas, containing definite alveoli suggesting a tubular



FIG. V. The left-sided pyelogram in Case III. It shows the peculiarly flattened cut appearance of the upper calyx and of complete filling of the middle calyx.

or alveolar adenocarcinoma. However if enough blocks are taken of the tumor and these sufficiently carefully studied one is almost certain to find all these various types and arrangement of cells in each tumor. Not infrequently we find in renal tumors diagnosed as carcinoma areas which if studied by themselves can not be differentiated from the predominating characteristics of either of the two above types of tumor. Similarly in tumors ordinarily called 'hypernephromata' we have not infrequently found areas which most pathologists would be willing to call carcinoma of one kind or another. Even Ewing who in his "Neoplastic Diseases" gives an elaborate classification of the various form of kidney tumors says "Recent studies have demonstrated that a large proportion of the reported hypernephromata are renal adenocarcinomata". It is for these reasons that we prefer to use Young's term 'nephroma' for the malignant tumors of the kidney rather than to use any one of the various classifications which may lead one to erroneous inferences.

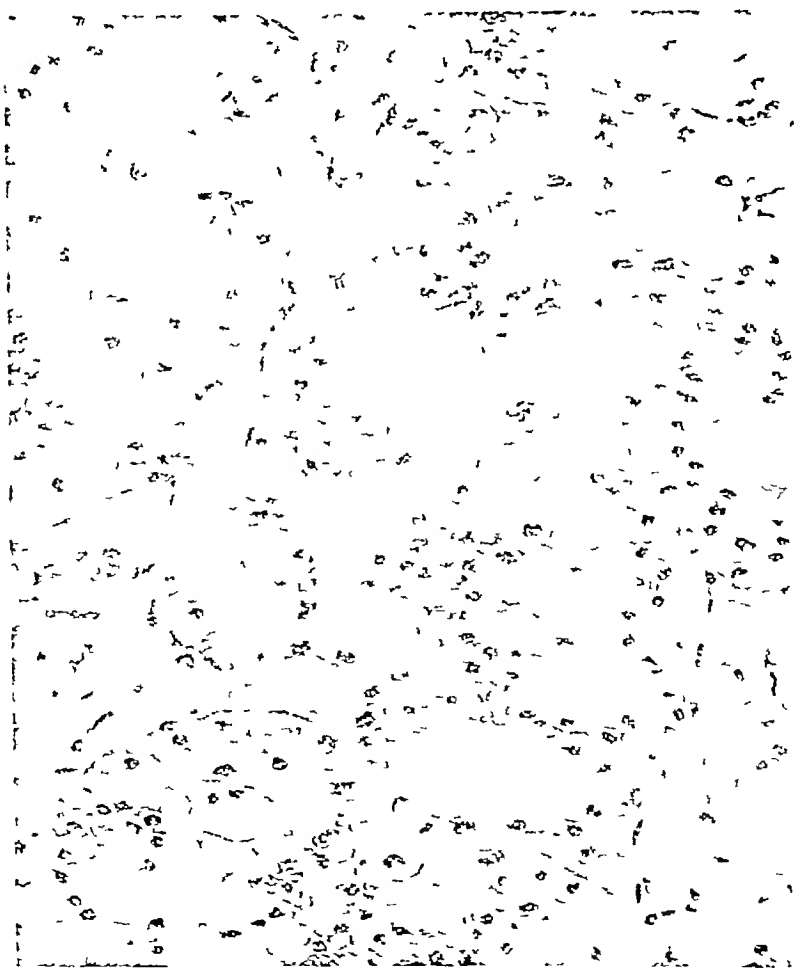


FIG. VI. Photomicrograph of a section of the nephroma described in Case III showing the tubular arrangement of it.

DUPLICATION OF RENAL PELVIS, WITH MASSIVE HYDRONEPHROSIS IN A BOY OF SIX

BY WALTER D BIEBERBACH, M D, F A C S

Through the courtesy of Dr William E Denning I saw a boy six years old desperately ill, with temperature 104.6, pulse 145, respiration 30. His mother states he has been sick all his life. He has suffered from intermittent attacks of fever which were described as colds or acute infections. At no time has there been complaints of diurnal or nocturnal frequency or has there been any noticeable blood in the urine. However, the mother has noticed that his urine has always been milky in character. For days before the child's admission to the hospital on November 4th, 1927, he was not feeling well and complained of pain in the right lower quadrant which gradually increased until it became severe extending from the costo vertebral angle down into the inguinal region. There was no nausea or vomiting but a history of marked constipation. The boy was well developed for his age, bright mentally, and showed no signs of past ill health which might be suspected from the above history. His physical findings were negative except for abdominal examination. This was slightly distended and tympanitic throughout. A fulness in the lower right quadrant could be made out but the borders were not sharply outlined. However, it gave me the impression of a tumor mass. There was a slight spasm along the margin of the rectus muscle but no rigidity or tenderness.

The urine was persistently alkaline in reaction with a specific gravity between 1012-1021, positive to albumen and negative to sugar. There were many pus cells in the sediment, triple phosphatic crystals, no blood or casts. Smear for T. B. negative. Culture B. coli communis. White count 14,600, reds 5,200,000, WBC 87% polys—13% monos. Kidney Function SPS first hour volume 140 c.c. 40%, second hour volume 50 c.c. 15%.

Cystoscopic examination was done under local anesthesia with No. 12 Buerger cystoscope. Anesthesia 1% novocaine. Duration of time of examination one hour. The anesthesia was complete and the patient complained of no pain.

Findings. Urethra negative. No residual urine. Bladder capacity 150 c.c. Urine was slightly turbid. Internal sphincter normal in size, shape and appearance. There was a defused chronic cystitis involving the entire mucosa of the bladder which was thickened lying over a mild musculature hypertrophy. The left ureteral orifice was in normal position, size and shape, and secreting apparently clear urine in normal rhythms. The right orifice was found in normal position, slightly retracted, rounded in shape and larger than normal with no inflammatory changes. This was seen to secrete a hazy urine. The orifice was easily catheterized with No. 5 lead catheter but soon met with obstruction. After manipulation it passed a point of obstruction and seemed to go to the pelvis of the kidney.

A plain X-ray picture was taken and showed the following as seen in Plate No. 1: a curled catheter in the lower ureter about on a level with the crest of the ilium. Immediately following full passage of the ureteral catheter there was a free flow of urine such as is seen on emptying a distended pelvis under pressure. The urine was light in color and hazy in appearance. Laboratory reports were as follows:

Right Kidney	Reaction	Alkaline
Urine	Albumin	Slight trace
	Sugar	Negative
	Sediment	Numerous pus cells
		Triple phosphates
	Culture	B. Coli Communis

The kidney was drained until pressure was reduced to a more normal drop and a pyelogram made by injecting sodium iodide 12½%. Sol. 15 c.c. was injected with no pain and plate No. 2 shows the results: enormous hydronephrosis, extra renal pelvis 7.5x2.5 cm. containing circular area of lessened density 1.5 cm. diameter which diverts the catheter in circular direction. All calices are greatly dilated.

It was desired at this time to find out whether he had a kidney on the opposite side and fearing inability to re-cystoscope the patient a light injection was made into the left kidney from which a normal pyelogram was obtained. The kidney was thoroughly drained before the X-ray catheter was removed. Following the cystoscopic examination temperature fell to normal and the patient was relieved due to re-establishing drainage on the right side. Four days after the cystoscopic examination the patient began to develop a rise in temperature with mild symptoms of renal retention and operation was decided upon (Dr William E Denning).

A low oblique incision was made and the kidney delivered. The upper kidney was normal in shape, size and appearance and contained a small pelvis from which led a normal ureter. The lower kidney showed marked pathological changes: hydronephrosis with very little renal structure left. There was a large extra renal pelvis and dilated ureter with a stricture at the pelvic-ureteral junction. This was the point where my catheter was obstructed and finally passed to coil into the large dilated pelvis of the lower kidney. An attempt was made to trace the ureters to the bladder to determine if they bifurcated or entered the bladder separately and as to their position. This would have necessitated a larger incision and prolonged operation. Fearing too great a risk in keeping the boy under the anesthesia it was not done. The kidney with as much of the ureter as could be taken was removed and Plates 4 & 5 show the congenital defect in two positions.

This is my second case of this type of anomaly. My first case was reported in 1924 and was found in a male, aged twenty-seven. Both these cases were sent into the hospital with a provisional diagnosis of appendicitis.

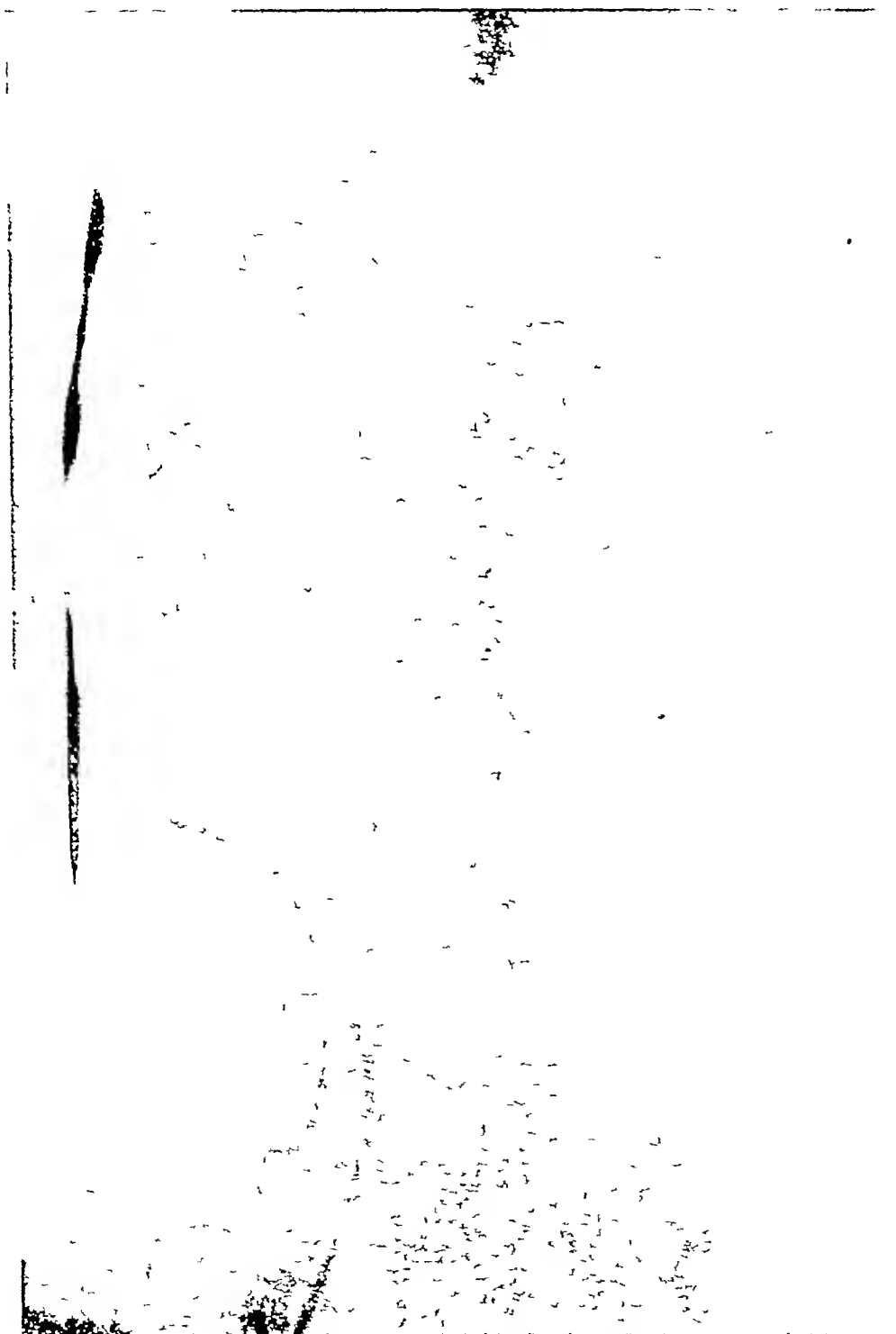


PLATE I No. 5 X ray catheter in right ureter



PLATE II Pyelogram right kidney



PLATE III Left ureteropelogram showing retained sodium iodide in right kidney and normal left side



PLATE IV
Removed kidney

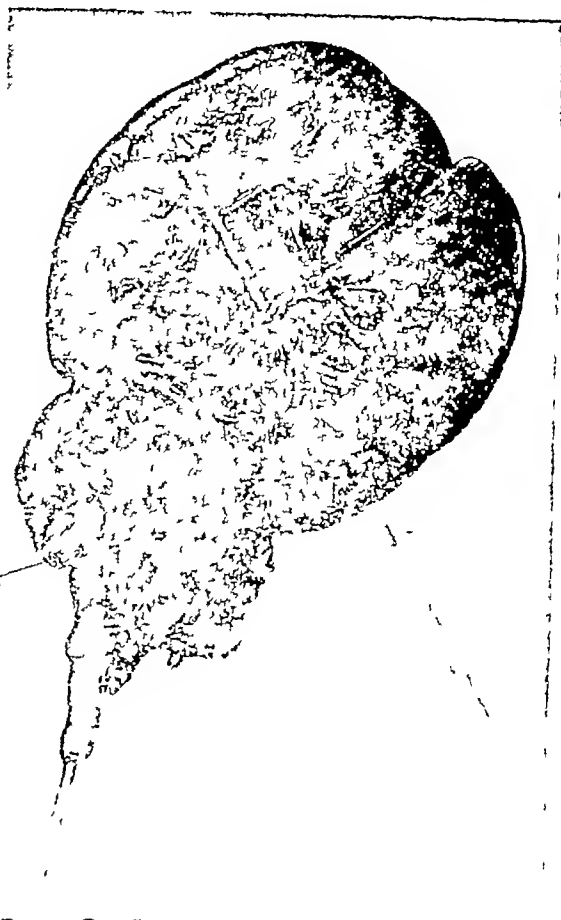


PLATE V
Both upper and lower kidneys split open showing each pelvis

THE LESLIE DANA MEDAL

The fourth award of the Leslie Dana Medal, presented annually through the Missouri Association for the Blind to the person selected from the nominations received by the National Society for the Prevention of Blindness, will take place during the 1928 meeting of the American Academy of Ophthalmology and Otolaryngology, in St. Louis, Missouri.

Nominations will be received by the National Society for the Prevention of Blindness, together with detailed information prompting the nomination, until the 15th day of May, 1928. The medical profession and ophthalmological societies are invited to submit names of persons deemed worthy of this honor to the National Society, under the conditions set forth in the deed of gift, as follows:

- a Long meritorious service for the conservation of vision in the prevention and cure of diseases dangerous to eyesight.
- b Research and instruction in ophthalmology and allied subjects
- c. Social service for the control of eye diseases

d Special discoveries in the domain of general science or medicine of exceptional importance in conservation of vision

The recipient of the first medal awarded (1925) was Dr. Edward Jackson of Denver. The second annual award (1926) was to the late Miss Louisa Lee Schuyler of New York City, and the third award (1927) was to Dr. Lucien Howe until recently of Buffalo, now of Cambridge.

EPIDEMIC ENCEPHALITIS SURVEY

The Joint Administrative Board of the Medical Center of New York City, reports that Dr. Josephine B. Neal, Director of the Wm. J. Mattleson Survey of Epidemic Encephalitis, has sailed for Europe to consult with European investigators of this disease.

The work of the Mattleson Survey is planned to be the first attack of both national and international scope on this disease which averaged 200,000 cases since 1917. On the commission, in addition to Dr. Neal, are Dr. Frederick Tilney, Professor of Neurology at Columbia University; Dr. William Darrach, Dean of the College of Physicians and Surgeons; chairman, Dr. Hubert Howe, instructor in Neurology at the same college; secretary, Dr. Haven Emerson; Dr. Frederick Gay; and Dr. W. J. Park.

ORIGINAL ARTICLES

DIPHTHERIA EPIDEMIC—MARLBOROUGH—AUGUST-NOVEMBER, 1927

BY EDWARD A. LANE, M.D.

MARLBOROUGH is a small industrial city with an estimated population in 1927 of 16,751. Public health activities are under the direction of a board of health which employs a full time agent. Not only is he the sole official worker of the board, but he is very much handicapped for lack of transportation. The school board employs a part-time physician and a full time school nurse.

During last September (1927) nine cases of diphtheria were reported from Marlborough. In October twenty-five cases were reported. On November 2nd and 3rd the city was visited to investigate the situation, during which time case records were obtained through personal visit on thirty of the thirty-five cases reported up to that time.

State Health Department records show the following diphtheria incidence for Marlborough for the past ten years:

1918	15 cases	1923	11 cases
1919	21	1924	70
1920	14	1925	9
1921	10	1926	1
1922	19	1927	5 (prior to onset of epidemic in August)

The five cases in 1927 prior to the onset of the epidemic occurred as follows:

February	1 case
March	3 cases
May	1 case

The course of the outbreak by weeks according to date of onset is as follows:

By Probable Source				
Week Ending	Total	Relative	School	Unknown
August	20	1	—	—
	27	4	—	—
September	3	3	—	—
	10	1	1	—
	17	—	—	—
	24	3	1	1
October	1	3	1	1
	8	4	—	—
	15	4	—	2
	22	2	—	1
	29	2	—	1
On	31	1	—	1
Unknown	2	(Sometime the forepart of September)		
	30	11	12	7

The two unknown cases included in the foregoing tabulation occurred in the same family at an interval of about a week. The onsets were some time the early part of September, but even the approximate dates could not be given with any assurance.

The cases appear to divide themselves roughly into two groups, the earlier of which, according to time of occurrence, centered about a related group of individuals living in the same neighborhood. The first nine cases in the outbreak and two cases occurring a little later in the course of the epidemic can be so classed. The other group, the first case in which occurred possibly about three weeks after the first case in the group just mentioned, centered about the John J. Mitchell School and consisted of twelve cases. The remaining seven cases were apparently due to chance contact with mild missed cases or carriers.

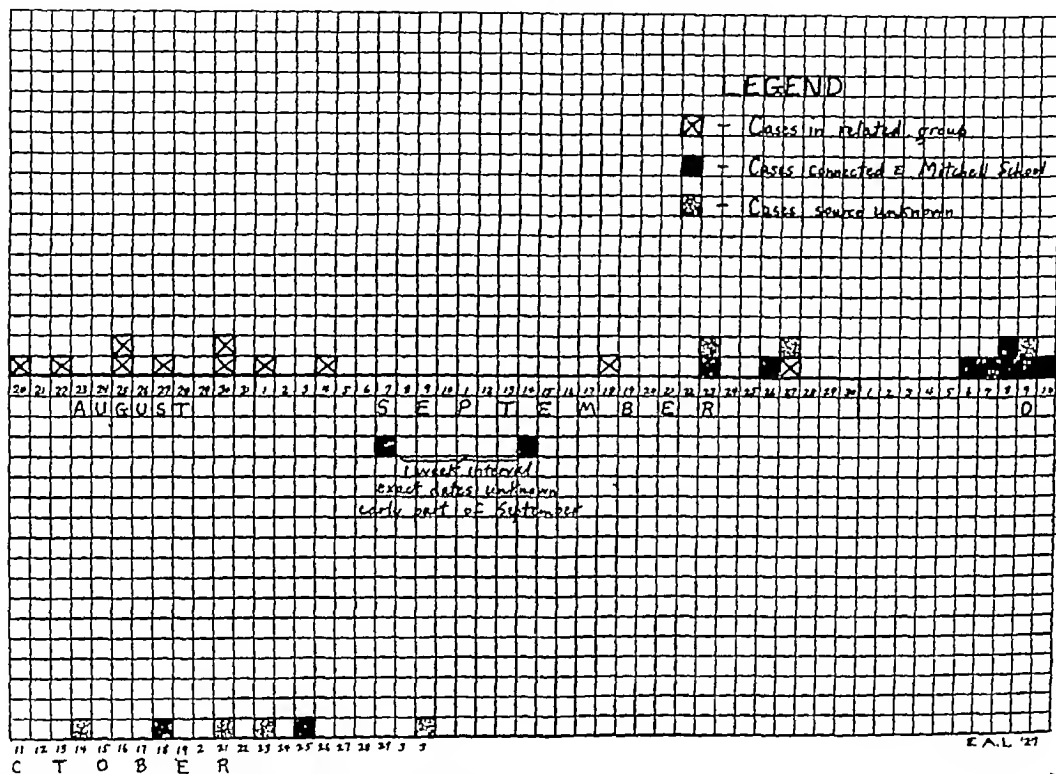
The first case to occur was in a child, age seven years, one of a family of six, all of whom developed the disease at intervals of two or three days. The onset of this case was given as about August 20th. This patient was not seen by a physician until September 3rd, about two weeks later. A positive culture was reported September 7th and the case reported by the local health department September 8th. All six members of this family and two other cases in this same group, one of which gave a history of direct exposure to the family just mentioned and the other of which had been exposed to the foregoing case, occurred before medical attention was secured for the first patient and the others in his family.

The primary case in the school group was one of the two in which the exact date of onset is unknown. These two cases, occurring a week apart in the same family, had their onset some time the forepart of September. As the earliest subsequent case in this group did not occur until September 23rd, there is no question about the chronology of these first cases. No possible connection could be discovered between the first school case and the individuals in the earlier related family group. This first school case was in a boy, age ten years, one of a family of twelve, only one other member of which, a sister age twelve years, gave a definite history of diph-

theria Her onset was about one week after that of her brother. The boy contracted some time the forepart of September what later proved to be nasal diphtheria. There had been no previous known or suspected exposure. His condition was not discovered until October 7th, some three or four weeks after onset, when a routine nasal culture at school was reported positive. He was said never to have been very ill but to have

dividuals and in part to a school outbreak. It further seems quite probable that a case of nasal diphtheria which was not recognized until three weeks or more after onset and which had not hindered attendance at school until a positive culture was obtained on October 7th was the inciting cause of the school outbreak. The source of infection of the initial cases in both groups could not be ascertained.

Diphtheria Epidemic - Marlborough - August - October 1927
Occurrence of Cases by Date of Onset



had a profuse, slightly brown colored nasal discharge. He had continued at school during the greater part of the three or four week period between onset of infection and discovery at school.

By October 7th, when the boy with nasal diphtheria was first discovered, four other school cases had occurred in addition to this boy's sister. Of the Mitchell School cases, three had been more or less intimately associated with the primary nasal case.

One missed case was discovered in a school boy. A very obvious paralysis of the palate following what the mother described as a mild sore throat made the diagnosis very evident. Two sisters of this boy subsequently contracted the disease at intervals of fourteen and twenty-two days.

From the evidence gathered it seems quite probable that the epidemic of diphtheria in Marlborough during the latter part of August, September and October, last year, was due in part to contact among a related group of in-

dividuals and in part to a school outbreak. It further seems quite probable that a case of nasal diphtheria which was not recognized until three weeks or more after onset and which had not hindered attendance at school until a positive culture was obtained on October 7th was the inciting cause of the school outbreak. The source of infection of the initial cases in both groups could not be ascertained.

CULTURES

Cultures had been reported on all but four cases, all of which were positive. One of the four exceptions was treated by an out of town physician, another was the missed case never seen by a physician, a third was hospitalized as a severe clinical case, while the fourth was a sister of the last mentioned.

INTERVAL FROM ONSET TO FIRST VISIT OF DOCTOR

1 day	4 cases	7 days	5 cases
2 days	5	9 "	1 case
3	3	12	1
4 "	2	21 "	1
5	1 case	Unknown	3 cases
6 "	3 cases	No physician	1 case

INTERVAL FROM FIRST VISIT TO REPORT BY DOCTOR TO LOCAL BOARD OF HEALTH

Same day	2 cases	5 days	2 cases
1	2	10	1 case
2 days	6	Unknown	9 cases
3	4	Not reported	1 case
4	3		

SEX

Thirteen cases were in males seventeen in females. The one fatal case occurred in a school girl, age ten, who had attended the Mitchell School.

AGE		AGE	
Age Group	Cases	Age Group	Cases
0-4	5	20-24	—
5-9	13	25-29	1
10-14	4	Adults	3
15-19	3	Unknown	1

ANTITOXIN

Only two patients did not receive antitoxin. In both instances fortunately, the disease was said to have been clinically quite mild. One was a child in whom the disease was not recognized until he returned to school and was sent home because of a positive school culture. In the other case, also, the child who had been kept home for what was thought to be a "cold" was sent home because of a positive culture taken on return to school.

PREVIOUS DIPHTHERIA

None of the patients were known to have had diphtheria previously.

INTERVAL FROM ONSET TO ISOLATION

This interval, which varied widely from one day to three weeks, is due in part at least to failure to call or delay in calling a physician.

1 day	2 cases	9 days	1 case
2 days	1 case	11	1
3	2 cases	13	1
4	3	16	1
5	2	18	1
6	2	21	1
7	7	No isolation	3 cases
8	1 case	Unknown	1 case

SLEEPING ARRANGEMENTS

In eight instances the patient is said to have slept alone. Among the remaining twenty-two cases, there was only one family, that with six cases, in which a patient had slept with a subsequent case.

NUMBER OF FAMILIES IN SAME HOUSE

In 14 cases	but one family in the house
11	two families in the house
2	three families in the house
1 case	four families in the house
2 cases	both in children occurred in a boarding house

ECONOMIC STATUS

Good	—
Fair	16
Poor	14

PREVIOUS EXPOSURE

Known	17	Own family	other infected family or Mitchell School
Suspected	6	Mitchell School	
Unknown	7		

CLINICAL TYPE OF DISEASE

Pharyngeal	26	Naso-pharyngeal	2
Laryngeal	—	Pharyngo-laryngeal	1 (intubated)
Nasal	1		

The pharyngo-laryngeal case occurred in a child, age four years, who had had the tonsils removed about six days prior to onset.

MILK

Milk was obtained from eleven different sources. One family had its own cow. In twenty-four of the cases the milk used was said to have been from a pasteurized supply.

Twenty-five patients used it regularly as a beverage, three, only occasionally, one very seldom and one only in cocoa.

FATAL CASES

There was one fatality in a girl ten years old. This was a severe pharyngeal case which showed immediate improvement following the administration of antitoxin. Death occurred nine days after onset from acute myocarditis.

It should be added that immunization against diphtheria with toxin-antitoxin had never been done in Marlborough as a community measure and in none of the thirty cases investigated had the Schick test ever been made or toxin-antitoxin administered. Since the investigation, extensive diphtheria immunization has been carried on in the Marlborough schools.

FUNCTIONAL RESULTS AFTER PROSTATECTOMY*

BY CHANNING S. SWAN, M.D.

THE patient who is faced with the necessity of having his prostate gland removed, naturally wants to know—not only what his chances are of surviving the operation, but also how good a functional result he is going to get. Although the literature on the first question is abundant, little has been written concerning the second problem of interest, i.e., the functional result. In Vol. II of Young's "Practice of Urology", P. 461, a tabulation of the results

obtained in 55 cases of suprapubic prostatectomy is recorded. Hinman, in the *California State Medical Journal* of April 1922, also gives a study of functional results. More recently an article by W. T. Briggs in the *Journal of Urology* for October 1927 reviews 50 consecutive cases with their functional result.

In order to get a more definite statistical reply to this phase of the prostate problem, it was felt that the results on an additional 100 cases would be helpful. In this series of 100 cases no

*From the Urological Clinic of Dr. John H. Cunningham.

patient is included who had not been out of the hospital at least six months, it being believed that this interval of time is necessary to determine what the end result is in regard to function. Furthermore, all these cases are from private practice and there is a complete record on each.

A questionnaire was sent to the 121 prostatectomy patients who were discharged from the hospital previous to six months ago, it being found necessary to send out 121 interrogations to get the 100 replies. The questionnaire was as follows

- (1) Did the operation restore your urinary function to normal? If not what trouble do you have?
- (2) a—How many times do you have to get up at night to pass your water?
b—How often do you pass your water in the daytime?
- (3) Is there any leakage or have you complete control?
- (4) Is there good force to the stream?
- (5) How much water will your bladder hold without discomfort?
- (6) Have you required any further treatment? If so, what?
- (7) How is your general health?

To the *first question*, "Did the operation restore your urinary function to normal?" there were 82 replies of "Yes." Four of these replies were from relatives of patients who had died of something other than urinary difficulties since their discharge from the hospital. Some of the qualified answers were as follow

"Have to make water more frequently in the day time"

"Have to strain to empty bladder completely"

"At times irritability and frequency for few days"

"Can't empty bladder at one effort at voiding"

"Stinging and burning at times on voiding"

"Slight weakness on lying down or getting up"

Other replies which criticised the functional result came under the matter of leakage or control and will be quoted after the question in regard to those

These 100 cases include all types of operation on the prostate and taking the series by type of operation, the answers to the first question are divided as follows

One Stage Suprapubic Prostatectomy	
Answered Yes	47
Answered No or qualified answer	7
Two Stage Suprapubic Prostatectomy	
Answered Yes	22
Answered No or qualified answer	1
Perineal Prostatectomy	
Answered Yes	4
Answered No or qualified answer	5
Punch Prostatectomy	
Answered "Yes"	9
Answered "No" or qualified answer	5
Total	100

All these statistics are on benign glands, the malignant prostate not being considered in this series

The first part of the *second question*, regarding nocturia, brought the following replies

None	18
Once	24
None to Once	16
Once to Twice	13
Twice	12
Two to Three	5
Three to Four	4
One to Four	2
Two to Five	2
Total	96

The replies to the questionnaire from the relatives of the four patients who had died contained answers to the first question only. Therefore, a total of 96 will appear in the remaining classification

The question of day frequency went as follows

Two to Three	9
Three to Four	33
Four to Five	15
Five to Six	13
Six to Seven or Eight	18
Eight to Ten	3
No answer	5
Total	96

In interpreting these last figures, it should be remembered that all patients, when discharged from the hospital, are urged to continue drinking several extra glasses of water a day

The *third question*, "Is there any leakage, or have you complete control?" brought an answer of "No leakage and good control" from 82, which corresponds to the number answering "Yes" to the first question, and seems to, therefore, be the main question that interests the patient after operation

Some of the qualified answers to this question were as follows

- 'Not complete but improving'
- Leaks a little when gets excited"
- 'Occasionally a little dribbling'
- 'Imperfect control leakage when constipated'
- Slight leakage at times 'Leakage in cold weather'
- Slow speed and dribble'
- 'A little leakage when very tired'
- Six made a reply of 'slight leakage'

The fourth question, concerning "Force of Stream" was answered as follows

Good	68
Fair	14
Poor	13
None	1
Total	96

Here again it will be noted that the total of the "good" and "fair" answers equals the 82 answers of "Yes" to the first question

The question "How much will your bladder hold?" apparently wasn't well understood

because there were 31 who replied "I don't know" However,

19 replied a pint or more
2 replied 11 to 12 oz
41 replied 6 to 8 oz
3 replied Very little

The sixth question "Have you required any further treatment, if so, what?" brought "No" from 76 Eight patients reported an attack of epididymitis, either unilateral or bilateral, after getting home from the hospital Two reported having had attacks of prethritis Two reported that the wound was slow in healing, and several stated that they had had sounds and irrigations as after treatment

The seventh question, "How is your general health?" was answered as follows

Good	73
Fair	7
Reported good up to death by relatives	4
Poor	1
Weak legs	7

The remaining 8 reported such matters as constipation, arteriosclerosis, dyspnoea, gas on the stomach, rheumatism, and the like

CONCLUSIONS

That 82 out of 100 patients should reply that prostatectomy had returned their urinary function to normal is certainly a hopeful outlook for the patient suffering from urinary obstruction, of benign prostatic origin. As might be expected, the suprapubic method gave the best functional result Those on whom the perineal route was used were in very poor general condition, which added to their chances of getting a poor functional result That 8 patients should report an attack of epididymitis after leaving the hospital is perhaps a little surprising and a fact that would interest those who advise routine bilateral vaso ligation before operation. It will be remembered that it was necessary to send out 121 letters to get the 100 replies, and naturally it is interesting to conjecture what the results were in those 21 cases and how they would affect the statistics of this series All that can be said, however, is that no replies were received, for some reason or other, and that the results in this series run about the same as those quoted by Drs Young, Hinman, and Briggs

GRASS IN THE URINARY BLADDER

BY VINCENT VERMOOTEN, M.D.*

INTRODUCTION

FOREIGN bodies in the bladder are not of infrequent occurrence They are found much more commonly in the female than in the male patient. The majority are presumably introduced accidentally during attempted masturbation

The rarity of grass being the foreign body in the bladder due to its flexibility and the difficulty of introducing it, and the infrequent finding of a foreign body unassociated with infection or calculus are the prime reasons for reporting this case.

CASE REPORT

The patient an unmarried stenographer 19 years of age came to the Urological Department of the New Haven Hospital with the complaint of pain in the right side

Her personal and family histories were irrelevant. She dated her present illness to eight months previous when she experienced pain in the right lower quadrant without any urinary or gastric symptoms. On account of the pain her appendix was removed and was found to be normal. When the pain recurred after the operation she was referred to a urologist, who treated her for ureteral stricture without relief of symptoms. She now began to have attacks of syncope which gradually increased in frequency until she was having as many as two a week. These

attacks apparently never occurred at home but often occurred in the office where only men were present. She denied having had sexual intercourse or having masturbated.

On physical examination the patient was found to be a very well-developed girl not acutely ill. Excepting for a definite sacro-iliac sprain on the right side no abnormalities were found.

Cystoscopic examination revealed a bladder of 400 cc. capacity lined by a normally smooth pale grey and glistening mucosa. The trigone was not red. The ureteral orifices were normal and functioned clear urine at regular intervals. In the bladder a narrow elongated dark foreign body was seen which was readily removed through an operating cystoscope. On examination this proved to be two blades of grass measuring 21 and 12 cm. in length. They were greenish in color soft and flexible, with no concretion attached. (See Figure 1.) The ureters were readily catheterized with No. 6 French catheters. A right pyeloureterogram was made which showed no variation from the normal. The urine from both kidneys and from the bladder contained no pus or organisms.

COMMENT

Briggs¹, in a recent article which sums up the literature on this subject, mentions a great variety of articles found in the bladder but does not include grass.

Chenoweth's case² is the only one reported in the literature in which grass was found in the bladder. In his case a piece of grass 15 cm. long, with concretions, was removed from the bladder of a young man who sometime previous-

*From the Department of Surgery Yale University School of Medicine New Haven, Conn.

patient is included who had not been out of the hospital at least six months, it being believed that this interval of time is necessary to determine what the end result is in regard to function. Furthermore, all these cases are from private practice and there is a complete record on each.

A questionnaire was sent to the 121 prostatectomy patients who were discharged from the hospital previous to six months ago, it being found necessary to send out 121 interrogations to get the 100 replies. The questionnaire was as follows:

- (1) Did the operation restore your urinary function to normal? If not what trouble do you have?
- (2) a—How many times do you have to get up at night to pass your water?
b—How often do you pass your water in the daytime?
- (3) Is there any leakage or have you complete control?
- (4) Is there good force to the stream?
- (5) How much water will your bladder hold without discomfort?
- (6) Have you required any further treatment? If so, what?
- (7) How is your general health?

To the *first question*, "Did the operation restore your urinary function to normal?" there were 82 replies of "Yes." Four of these replies were from relatives of patients who had died of something other than urinary difficulties since their discharge from the hospital. Some of the qualified answers were as follow:

'Have to make water more frequently in the daytime'

'Have to strain to empty bladder completely'

'At times irritability and frequency for few days'

'Can't empty bladder at one effort at voiding'

'Stinging and burning at times on voiding'

'Slight weakness on lying down or getting up'

Other replies which criticised the functional result came under the matter of leakage or control and will be quoted after the question in regard to those.

These 100 cases include all types of operation on the prostate and taking the series by type of operation, the answers to the first question are divided as follows:

One Stage Suprapubic Prostatectomy	
Answered 'Yes'	47
Answered 'No' or qualified answer	7
Two Stage Suprapubic Prostatectomy	
Answered 'Yes'	22
Answered 'No' or qualified answer	1
Perineal Prostatectomy	
Answered 'Yes'	4
Answered 'No' or qualified answer	5
Punch Prostatectomy	
Answered 'Yes'	9
Answered 'No' or qualified answer	5
Total	100

All these statistics are on benign glands, the malignant prostate not being considered in this series.

The first part of the *second question*, regarding nocturia, brought the following replies:

None	18
Once	24
None to Once	16
Once to Twice	13
Twice	12
Two to Three	5
Three to Four	4
One to Four	2
Two to Five	2
Total	96

The replies to the questionnaire from the relatives of the four patients who had died contained answers to the first question only. Therefore, a total of 96 will appear in the remaining classification.

The question of day frequency went as follows:

Two to Three	9
Three to Four	33
Four to Five	15
Five to Six	13
Six to Seven or Eight	18
Eight to Ten	3
No answer	5
Total	96

In interpreting these last figures, it should be remembered that all patients, when discharged from the hospital, are urged to continue drinking several extra glasses of water a day.

The *third question*, "Is there any leakage, or have you complete control?" brought an answer of "No leakage and good control" from 82, which corresponds to the number answering "Yes" to the first question, and seems to, therefore, be the main question that interests the patient after operation.

Some of the qualified answers to this question were as follows:

- 'Not complete but improving'
- 'Leaks a little when gets excited'
- 'Occasionally a little dribbling'
- 'Imperfect control leakage when constipated'
- 'Slight leakage at times' Leakage in cold weather'
- 'Slow speed and dribble'
- 'A little leakage when very tired'
- Six made a reply of 'slight leakage'

The fourth question, concerning "Force of Stream" was answered as follows:

Good	68
Fair	14
Poor	13
None	1
Total	96

Here again it will be noted that the total of the "good" and "fair" answers equals the 82 answers of "Yes" to the first question.

The question "How much will your bladder hold?" apparently wasn't well understood.

MEDICAL PROGRESS

PROGRESS IN ORTHOPEDIC SURGERY (1927)

BY RALPH K. GHORMLEY, M.D.

THIS "progress" covers the material available from April 1 1927 to January 1, 1928. The author wishes to acknowledge the use of abstracts prepared by the authors of the "Progress of Orthopedic Surgery" published in the *Archives of Surgery*.

No outstanding work has come to light during this period. Some important pieces of work have been published and these are here abstracted.

ARTHRITIS

Further reports on the use of O-iodoxybenzoic acid in the treatment of arthritis come from Smith (*Boston M & S Jour*, Feb 24 1927) and Trauba (*Jour A M A*, Oct 11 1927) and they are somewhat less favorable than those of Young & Youmans published last year. However these authors both feel that the treatment is worthy of further trial in selected cases. More careful selection of cases is needed as well as a more definite knowledge of the best method of administering the drug.

By neutralization of alexin in arthritic patients' blood Hadjopoulos and Bubank (*Jour Bone & Joint Surg*, Apr 1927) have grown pure cultures of streptococci. They have then produced arthritis in animals by injection of these organisms into the blood stream.

Nachlas (*Jour Bone & Joint Surg*, Jan 1927) concludes from his studies that neither blood calcium or phosphorus are affected in either type of arthritis.

Pavv (*Munch Med Woch*, Vol 74 No 33 p 1437) adds to the evidence in favor of synovectomy of the knee in cases of infectious arthritis.

Thomas (*Jour A M A*, Dec 24 1927) summarizing the results in 107 cases of gonorrheal arthritis finds the highest percentage of cures in cases where the prostate and seminal vesicles received special attention and where biologic and chemo-therapy were employed. Operative procedure and fixation tended to produce the greatest number of permanently disabled joints.

Swain L. T. and Spear, L., (*Boston M & S Jour*, Sept 1 1927) have studied the basal metabolism in 200 cases of arthritis of all types. They found that age, duration of disease and activity of the disease had no effect on the basal metabolism. In the atrophic and hypertrophic cases there was a tendency to a minus rate.

TUBERCULOSIS

Hibbs (*Southern M Jour*, Apr 1927) reviewing his cases of tuberculosis of the knee

and hip emphasizes again the importance of a correct diagnosis by laboratory methods. In cases of knee joint tuberculosis there were 16% error in diagnosis while in hip joint tuberculosis 22% were incorrectly diagnosed. His figures in both these series indicate much better results following operative measures than where conservative measures were followed.

Koenig (*Zentr f Chu*, April 23 1927) calls our attention again to the fact not too well recognized that there may be bony foci of tuberculosis present without any demonstrable change in the X-ray plate.

Henderson, M. S., and Fortin H. J., (*Jour Bone & Joint Surg*, Oct 1927) have reviewed 211 cases of proven tuberculosis of the knee joint treated by resection. 194 of these cases are included in the end result study. Of these 88.5% secured good bony union. 8.5% are dead. This is a high percentage of "cures" of tuberculous knee joints if one can conclude that by good bony union the authors imply a cure.

This report together with that of Hibbs indicates a much stronger trend toward operative treatment at least of tuberculosis of the knee joint.

Guillot, M. and Dehelly, G., (*Bull et Mem Soc Nat de Chu*, 1916, 1 1144) in treating 34 cases of tuberculosis of the spine found that the Hibbs fusion alone was not so satisfactory as the same operation with an osteoperiosteal graft added.

The studies of Atsatt (*Jour Bone & Joint Surg*, Oct 1927) point toward a more accurate method of detecting the presence of active tuberculosis. His method consists in simultaneous tests with four strengths of tuberculin. His results indicate that in proper hands such a procedure can be of real diagnostic value.

Kiernan J. A. (*Boston M & S Jour*, June 2 1927) writing on the subject 'Livestock Diseases Affecting Public Health' gives some very important facts on tuberculosis. Of 1,173,626 cattle reacting to tuberculin and being killed 91.7% showed definite macroscopic tuberculosis. He further outlines the work being done to eradicate the disease from milk producing herds.

OPERATIONS

Brackets's (*Am Jour of Surg*, March 1927) discussion of reconstruction operations on the hip discourages the procedure in tuberculosis at any stage. His recommendation is a stiff hip. The same holds true of osteoarthritis if there is little prospect of continued function. If there is such prospect he advocates no operation. In old fractured neck where the head is in such

ly had used grass to push "gonna salve" into his urethra

According to Zuckerkandt³ wax does not become encrusted, silver slowly, while iron, rubber and vegetable matter are most rapidly coated

Practically all foreign bodies which have not knowingly been introduced into the bladder by a physician are only found after severe infection has resulted and commonly not until calcareous deposits have formed about them. This is due to the fact that the patient who masturbates and accidentally introduces a foreign body does not seek medical aid until his symptoms practically incapacitate him, even then his appar-

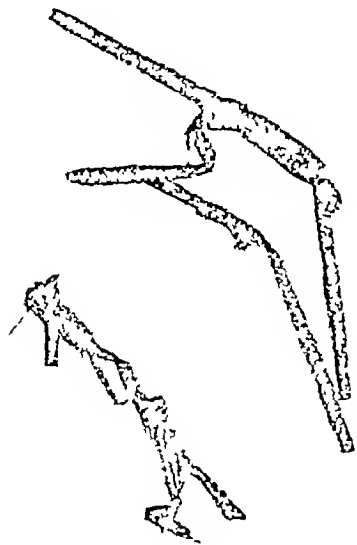


FIGURE 1 The two blades of grass (natural size) which were removed from the bladder

ently intractable cystitis may be treated for months before the etiology is discovered by cystoscopic or roentgenological examination

This patient had evidently introduced the grass into her bladder between the time she had her stricture dilated and her admission to the New Haven Hospital. It could not have been there very long or the normal sequence of infection and calculus formation would have resulted

SUMMARY

Foreign bodies in the bladder are not of infrequent occurrence. They are, however, in most instances associated with infection and many are complicated by the formation of a calculus

The case reported here was one in which vegetable matter in the form of two blades of grass

was the foreign body and in which neither of the commonly associated complications were present

REFERENCES

- 1 Briggs W. T. Jour of Urology 1926 XV 383
- 2 Chenoweth E. Med Jour of Australia 1935 I 340
- 3 Zuckerkandt O. Quoted from Briggs

UNITED STATES PUBLIC HEALTH SERVICE

CHRONOLOGICAL LIST OF CHANGES OF DUTIES AND STATIONS OF COMMISSIONED AND OTHER OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

FEBRUARY 15 1928

Sanitary Engineer H. R. Cloughurst Directed to proceed from Cincinnati Ohio to Washington D. C. and return in connection with stream pollution investigations February 8 1928

Surgeon Joseph Bolten Directed to assume duties of Medical Officer in Charge of Venereal Disease Clinic at Hot Springs National Park in addition to his duties as Superintendent of the Hot Springs National Park February 8, 1928

P. A. Surgeon L. C. Scully Directed to proceed from Ellis Island N. Y. to Asbury Park N. J., and return for the purpose of examining persons of the Coast Guard February 8 1928

Assistant Surgeon E. H. Carnes Directed to proceed from Ellis Island, N. Y. to Asbury Park, N. J. and return for the purpose of examining persons of the Coast Guard February 8 1928

A. A. Surgeon Charles Bolduan Relieved from duty at Bremen Germany and assigned to duty at Ellis Island N. Y. February 8, 1928

Surgeon Carroll Fox Directed to proceed from Rosebank, N. Y. to such ports or places as may be necessary in Brazil Argentina Paraguay, Uruguay, Chile, Peru and Ecuador in connection with matters related to preventing the introduction and spread of epidemic diseases into this country February 9 1928

A. A. Dental Surgeon B. M. Piejean Directed to proceed from Carville La. to Pensacola Fla. and return to secure custody of two patients February 9 1928

Surgeon Charles Armstrong Directed to proceed from Washington D. C., to Baltimore Md. and return in connection with field investigations of public health February 9, 1928

Assistant Surgeon General (R) Wm. S. Terriberry Directed to proceed from New York N. Y. to Oswego N. Y. and return to investigate a claim for the U. S. Employees Compensation Commission February 11, 1928

A. A. Surgeon O. C. Wenger Directed to proceed from Hot Springs Ark. to Indianola Miss. to deliver lectures to School of Health Officers at that place and to Athens Ga. to deliver address at Medical Institute being held in that place February 11 1928

Assistant Surgeon Ralph Horton Relieved from duty at Baltimore Md. and assigned to duty at Detroit Michigan M. H. No. 7 February 11, 1928

BOARDS CONVENED

Boards of officers convened to meet at Montreal, Canada at call of chairman to examine alien
Detail for the Board
Surgeon Louis Schwartz Chairman
A. A. Surgeon A. G. Morphy, Member
A. A. Surgeon F. H. Mackay Recorder
Official

H. S. CUMMINGS Surgeon General

Endocrine Errors

Gigantism
Acromegaly
Mollities Ossium

Osteomalacia
Dwarfism and Infantillism
of various types

Affections of Unknown

Origin
Fibrocystic Disease
Leontitis
Multiple Neoplasms

Osteitis Deformans
Arachnodactylis

Von Hazel and Andrews (*Surg Gyn & Obs* July 1927) writing on the subject of osteitis deformans have concluded that an internal glandular disturbance must exist. Due to an increase in the secretion of the parathyroid gland there is an increase in the permeability of the tissues which entails an inability of the osseous structures to retain their calcium. All of the cases studied show a positive calcium balance. The authors note that Parriere and Costeo (*Compt Rend Soc de Biol*, 1589, XCV, 1926) have identified changes in the parathyroids which they believe to be pathognomonic of hyperfunction. Also Mande (*Zentralb f Chir*, 1927, 1 257) has removed parathyroid tumors in a case of Paget's disease and brought about improvement.

Bird, C E (*Arch Surg*, 1927, XIV, 1187) has collected five cases where sarcoma developing in bone affected with Paget's disease has been verified pathologically and four others not verified. He believes that the incidence of sarcoma in Paget's disease is about one in ten.

Knaggs, R L, (*British Jour of Surg* July 1927, XV, No 57) has reviewed the subject of achondroplasia (chondrodystrophia foetalis) in a most admirable article. His description of the gross and microscopic anatomy is important. He points out the difference between this condition and osteogenesis imperfecta at the same time showing that the conditions may perhaps exist in the same case. He sums up the arguments as to its causation, but points out that "until microscopic investigation decides the nature of the ossification process at the epiphyseal lines" this question will remain unsettled.

Brockman, E P, (*British Jour of Surg*, XIV, No 56, 1927) shows changes in the long bones occurring in three cases of chronic interstitial nephritis in children, together with a pathological study of the bone from one of these cases.

His findings are summarized as follows:

- 1 The shafts of the bones in renal rickets are straight and the deformities are due to separation and displacement of the epiphyses.
- 2 The red marrow is replaced by a fat marrow, more advanced in some bones than in others.
- 3 There is very little bone formation.
- 4 There is active bone absorption by osteoclasts.
- 5 Replacement of the absorbed bone by fibrous tissue.

6 Thickening of the walls of the arteries in the medulla with degeneration of the endothelial cells lining them.

7 An increase in the number of capillaries in the region of the growth disc as compared both with normal and with rickets.

VASCULAR DISEASE

While this subject may not strictly be called orthopedics, yet, on account of its very vital importance, these three articles reviewed below are included.

Senique (*Presse Medicale*, April 9, 1927) reviewing the work of a Russian surgeon Herzburg of Oppell, and of his own cases where suprarenectomy was performed for spontaneous gangrene of the extremities concludes that the operation based purely on hypothesis did not receive clinical confirmation.

Allen (*Bost M & S Jour*, Aug 25, 1927) summarizing his results on circulatory diseases of the extremities treated by periarterial sympathectomy concludes that "in cases with adequate circulation, with vasomotor and trophic disturbances of short duration, where proper protection can be given afterwards it may be justifiable." He feels that the operation combined with the Ramusectomy of Royle or the latter operation alone are perhaps more effective.

Brown, G E, and Henderson, M S, (*Jour Bone & Joint Surg*, Oct 1927) have summarized in an excellent paper the present knowledge of arterial vascular diseases of the extremities. Their classification is as follows:

FUNCTIONAL TYPES OR VASOMOTOR

Local Distribution

Vasoconstricting Types

- 1 Multiple phase color reaction, (Raynauds)
- 2 One phase color reaction—acrocyanosis
dead finger, local syncope

Vasodilating Types

Erythromelalgia

General Distribution

Vasoconstricting

Primary or essential hypertension early stages

Vasodilating Types

Primary or essential hypertension

ORGANIC TYPES

Local Distribution

- 1 Arteriosclerosis with or without thrombosis—diabetic gangrene
- 2 Thrombo angitis obliterans
- 3 Simple thrombosis or embolism
- 4 Arteritis of known infectious origin (rheumatic, syphilitic)
- 5 Aneurysm with or without thrombosis

General Distribution

Arteriosclerosis

- 1 Primary
- 2 Secondary to hypertension.

They review the treatment of these conditions. Nothing new is offered, but an excellent brief summary on present methods is given.

shape that it may perform a part of its function it should be left

Cotton's (*Surg Gyn & Obs*, Sept 1927) summary of his cases of fractured neck of femur treated by artificial impaction should be given careful attention by those interested in the treatment of fractured hips. His arguments for this method are sound.

Two operations for fusion of the sacroiliac joint have been recently published. Campbell's (*Surg Gyn & Obst*, Aug 1927) is described as extra articular, being an arthrodesis behind the joint between the ilium and sacrum. Gaenslen's (*Jour A M A*, Dec 1927) procedure is an intraarticular procedure after splitting the ilium into two "plates" over the joint. Both of these procedures are sound and apparently satisfactory surgical procedures. What is far more necessary than new operations to fuse the sacroiliac joint is sounder methods of determining when such fusion should be done.

Ober's operation for relief of gluteus maximus paralysis (*Jour A M A*, Apr 2, 1927) is a modification of the Legg and Lange operations, with the advantage over the latter that living autogenous fascia is used to connect the freed attachment of the outer half of the erector spinae muscle to the femur at the site of attachment of the gluteus maximus. The stabilization given these patients in standing and the relief from contracture of the fascia is marked.

Raedel (*Zentr f Chir*, March 5, 1927) reports a new method of transplant for relief of paralysis of the serratus anterior muscle. Splitting off the outer half of the longissimus dorsi he pulls it through the inner half and attaches it to the lower edge of the scapula as well as the sixth, seventh, and eighth ribs. Such a procedure, if effective, offers a real surgical help, as the cases of paralysis of the serratus have been serious where permanent.

Mayer, L., (*Jour Bone & Joint Surg*, 1927 IX 412) advocates transplant of a portion of the trapezius together with a fascia transplant as tendon to replace paralyzed deltoid muscles. He states that to secure a satisfactory result the trapezius, the serratus magnus, and either the pectoralis major or the biceps must be active. Of six cases done thus far four have shown improved function.

Cleveland (*Archives of Surg*, June 1927) found in a study of end results in 200 cases of hallux valgus that the best results were obtained by resection of the metatarsal head together with removal of the exostosis. On the other hand, Pick (*Archiv f Orthopaedie* 1926, Vol 24, No 2) in a study of 28 cases thought the best results were obtained with Ludloff's operation (oblique osteotomy of the first metatarsal bone) and Holmann's operation (wedge osteotomy and transplant of abductor hallucis) and that less satisfactory results came from excision of the metatarsal head.

Such reports only serve to show the wide

variation in procedure. It comes down to a question of care in doing whatever procedure is best in that particular operator's hands.

Abbott's (*Jour Bone & Joint Surg*, Jan 1927) work on lengthening of the tibia and fibula is new and promising. His apparatus consists of two steel transfixion pins and adjustable rods so fixed to a Thomas splint that absolute control of the fragments is obtained. Gradual adjustment maintains stretching at the rate of 1/16" to 1/8" per day. Of six cases treated five are successful with a maximum gain of 1 7/8".

Silver's operation for relief of joint contractures (*Jour Bone & Joint Surg* IX, 1927) by stripping of the capsule from the bone on the contracted side of the joint is applicable to a great number of cases of persistent troublesome joint contractures.

The operation described by Armitage Whitman (*Jour A M A*, Dec 24, 1927) for scoliosis with severe posterior deformity of the thorax is promising. He resects portions of the most prominent ribs and uses these as grafts to the spine. In nine cases thus treated the author feels that the constitutional improvement has been such as to warrant the procedure, as well as the improvement in the patient's appearance.

OSTEOMYELITIS

Little has been done on osteomyelitis during the scope of this review. Two articles, however, deserve mention. Thornton, L., (*Surg Gyn & Obs*, Sept 1927) describes an operation for the treatment of infected compound fractures of the tibia. After resecting the diseased area a large sliding graft is used to fill in the diseased area. The same author (*Jour Bone & Joint Surg*, Apr 1927) describes an operation for the treatment of osteomyelitis of the lower end of the femur. Success in both of these procedures must depend on the care used in selecting patients for the operation, and in the detail of the technique.

SEVERAL DISEASES OF THE SKELETON

Under the title "Some General Diseases of the Skeleton" Fairbank, H. A. T. (*British Jour of Surg*, July 1927, Vol XV, No 57) has summed up our present knowledge of these diseases. His classification is as follows:

GENERAL AFFECTIONS OF THE SKELETON

Congenital Developmental

Errors

Osteogenesis Imperfecta
Diaphyseal Aclasis
Dyschondroplasia
Achondroplasia

Craniocleidodysostosis
Ateleiosis
Myositis Ossificans Idiopathica

Errors of Metabolism

Scurvy
Rickets
Renal Dwarfism

Dwarfism Associated with
1 Cardiac Disease
2 Pancreatic Disorder
3 Hypertrophic Cirrhosis of Liver

Case Records of the Massachusetts General Hospital

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, M.D.
F M PAINTER, A.B. ASSISTANT EDITOR

CASE 14031 RECURRENT ASCITES MEDICAL DEPARTMENT

First admission A widowed English cook sixty-six years old entered March 27 for enlargement of the abdomen of ten months' duration with loss of weight and strength. She had been a steady user of considerable alcohol.

The family history is irrelevant. Her past history is negative. She had always had the finest of health.

Clinical examination Poorly developed and nourished. Apex impulse of the heart seen and felt in the fourth space outside the nipple line 12 centimeters from midsternum. Action slightly irregular. Over the precordia loudest at the pulmonary area but heard also at the apex and to the right of the sternum a soft systolic murmur. Pulmonic second sound greater than aortic second, slightly accentuated although the aortic second was sharp, clear and rather ringing. Pulses slightly irregular of fair quality. Artery walls showed well marked fibrous thickening and tortuosity. Blood pressure 145/83, 130. Right cornea opaque. Neither pupil reacted. Abdomen girth 115 centimeters. Fluid wave. Marked prominence of superficial veins.

March 27 an abdominal tap gave 2½ gallons of straw colored, very slightly turbid fluid, specific gravity 1.010, albumin ¼ per cent, 93 per cent lymphocytes, 7 per cent polymorpho-nuclears, many epithelial cells, culture no growth, guinea pig test negative. April 6 5 100 cubic centimeters of similar fluid was withdrawn, and April 27, 6,720 cubic centimeters more. After the first tap a smooth hard liver was felt two fingerbreadths below the costal margin. The spleen was not felt. The patient showed great improvement after the taps. A Wassermann was negative. At the end of five weeks she was discharged slightly relieved.

Second admission June 2, five weeks after her discharge, she returned because of recurrence of the ascites.

Clinical examination showed an emaciated woman with cataracts of both eyes. Pupils irregular. Apex impulse of the heart felt in the fifth space 11 centimeters from midsternum in the midclavicular line, corresponding with the

left border of dullness. Action regular, not rapid. Sounds of good quality. First sound at the apex reduplicated. A very soft blowing systolic murmur at the apex, not transmitted. Pulmonic second sound equal to aortic second, with slight accentuation. Systolic blood pressure 150. Artery walls thickened and tortuous. Dullness with many medium moist râles at both bases behind. Tremendous abdomen, girth 112 centimeters. Umbilicus dark purple, protruding. Leukocytes 11,000 to 14,000, slight achromia.

An abdominal tap gave 13 440 cubic centimeters of fluid similar to that of the previous taps. After the tap the liver edge was palpable just above the costal margin. June 14 the patient was discharged.

History of interval After leaving the hospital she was up and about feeling quite well although her abdomen continued to increase in size.

Third admission July 5 three weeks after her last discharge.

Clinical examination (As before except as noted.) Apex impulse of the heart not seen or felt. Left border of dullness in the fifth space 10 centimeters from midsternum in the midclavicular line. No enlargement to the right. Action regular, not rapid. Sounds of fair quality. No murmurs. Pulmonic second sound less than aortic second, which was slightly accentuated. Systolic blood pressure 143. Artery walls slightly thickened, not tortuous. Slight dullness at the bases of the lungs, where breath sounds, voice and fremitus were slightly diminished. A few fine moist râles at the right base. Abdomen tense. Circumference 112 centimeters. Fluid wave. Moderate umbilical hernia. Very small enlarged superficial veins on sides of abdomen and chest. Slight edema of the abdominal wall above the pubes. Liver dullness from the fourth space, joined the abdominal dullness. Reflexes normal. A raised translucent blister on the left ankle. Numerous small dilated venules on the thigh. Considerable edema of legs, ankles and back.

Amount of urine normal, specific gravity 1.020 at two examinations, the slightest possible trace of albumin at one, very many leukocytes in the sediment of both specimens (no catheter specimen), no red cells.

The day of admission 33 pints of ascitic fluid was withdrawn, and July 14 18 pints. The patient failed steadily, with no evidence of localized complication. July 16 she went into coma. July 17 she died.

DISCUSSION

BY RICHARD C CABOT, M.D.

NOTES ON THE HISTORY

Of course we must not let that previous history of using alcohol prejudice us in assuming that this is cirrhosis of the liver. It may well

POLIOMYELITIS

This subject has been of much interest to all of us because of the late epidemic in Massachusetts. What may come of the studies during that epidemic remains to be seen.

Luther (*Boston M & S Jour*, Dec 22, 1927) has given an up-to-date summary of the facts known regarding diagnosis in the early stages of the disease, and particularly points out that the non-paralytic and paralytic cases are alike in their onset and no one can tell in the pre-paralytic stage which type the case may belong to.

Rosenow and Nickel (*Am Jour Diseases of Children*, Jan 1927) report the results of 1,113 cases of anterior poliomyelitis treated with poliomyelitis antistreptococcus serum. There were also 278 control untreated cases. They state that the mortality rate and the incidence of residual paralysis are lower in the treated cases than in the control, but qualify this statement by saying especially when treated early. They feel, however, that they are justified in concluding that their poliomyelitis antistreptococcus serum is of value in the treatment of acute anterior poliomyelitis.

MISCELLANEOUS

Mayer, (*Jour A M A*, July 30, 1927) summarizes light treatment in tuberculosis as follows—

"Light in any form by itself is not curative but comprises only one of the important adjuncts in the treatment of tuberculosis. To believe that sunlight or artificial sources of light will cure all forms of "surgical" tuberculosis to be unduly optimistic about this treatment and to consider it a specific form of treatment to use it without some medical guidance and adequate equipment, and, finally, to employ it to the exclusion of rest and the hygienic dietetic regimen, eliminating orthopedic measures or the occasional necessary surgical intervention in bone and joint tuberculosis, is bound eventually to dishearten many sufferers, and to bring discredit on an otherwise eminently desirable method of treatment."

King, J. M., Jr., and Holmes, G. W., (*Am Jour Roentgenology*, 1927, XVII, 214) Out of 450 cases reviewed where shoulder X-rays were taken 300 were negative. 97 showed fractures or dislocation, 20 arthritis, 13 subacromial bursitis, and the remainder, lesions of less frequent occurrence. The authors, in discussing the causes for frequent negative X-ray findings point out that many cases having shoulder pain in reality have a referred pain, and also that many conditions that affect the shoulder do not produce changes, and also that various positions for taking X-rays of shoulders are advantageous.

In an article entitled "Shoeing Problems and the Human Foot," Painter (*Boston M & S Jour*, Aug 18, 1927) discusses the modern shoe

He describes what he considers adequate shoes and points out that while children's and men's shoes are for the most part fairly satisfactory, women's shoes are the great problem.

Morton and Stabins (*Annals of Surgery*, Sept 1927, and *N Y Med Jour*, Nov 1, 1927) report experiments on the subject of osteogenesis. By tying the saphenous vein in dogs they got delayed union in fractured and resected fibulae. However when the deep veins were ligated the union was not delayed, but took place with more bone production than on the control side. They have not been able to satisfactorily explain their results, but point out that these experiments tend to confirm the work of Burrows who found that the essentials for growth are a retarded circulation and a diminished oxygen tension.

This is of great interest, and further reports of these experiments should shed some light on non-union or delayed union in fractures.

FIFTH INTERNATIONAL MEDICAL CONGRESS OF INDUSTRIAL ACCIDENTS AND OCCUPATIONAL DISEASES

The Fifth International Medical Congress for Industrial Accidents and Occupational Diseases is definitely announced to be held in Budapest, Hungary, September 28-30, 1928. National committees have been formed in the principal countries.

Since the first American announcement of December 1st, 1927, Dr. Fred H. Albee, New York City, and Dr. Emory R. Hayhurst, Ohio State University, Columbus, both members of the Permanent International Committee have been appointed Joint Chairmen of the National Committee for the United States, and have appointed Dr. Richard Kovacs, New York City, as Secretary and the others named in the letter head to serve as members.

The Travel Study Club of American Physicians, of which Dr. Albee is President and Dr. Kovacs Secretary, has rearranged its summer trip for 1928 especially to focus upon the Budapest Congress. Those who have already indicated their intention of attending the Congress and others are invited to join the Travel Study Club either for the entire trip or at any point. The itinerary thus far arranged calls for sailing from New York on the S. S. Munchen of the North German Lloyd on August 16th, three days in Berlin, two days in Carlsbad, five days in Budapest, two days in Vienna, two days in Bad Reichenhall and Salzburg and two days in Munich then via Milan to Nice for two days and from September 17th to 27th in Spain sailing from Gibraltar on September 28 on the S. S. Conte Grande of the Italian Mediterranean Service due back in New York on October 5th.

Correspondence regarding the trip should be had with Dr. Richard Kovacs, 223 E. 68th Street, New York City.

THE SUPERINTENDENT OF THE VETERANS BUREAU HOSPITAL AT RUTLAND WILL REMAIN

Dr. Henry L. Stickney will continue as Superintendent of the Veterans Bureau Hospital at Rutland.

Complaints were submitted to the Director Frank T. Hines, alleging that his service had not been satisfactory. Nothing affecting the integrity of Dr. Stickney has been shown and reports in the papers indicate that the Director found occasion for no other actions than giving advice pertaining to minor details.

no evidence of cardiac or renal disease. It ought to be cirrhosis of the liver.

Rarer causes of ascites are pernicious anemia or some other rare types of blood disease. In leukemia also we get ascites now and then. Ascites does not include septic peritonitis from any source. Pus is not ascites, so we will not consider it. Banti's disease is not cirrhosis of the liver, but distinct from it, though it is sometimes included under it. Filaria gives a chylous ascites. Blocking of the portal vein or its radicles gives ascites. Acute toxic hepatitis,—or as we used to say acute yellow atrophy,—or subacute or chronic toxic hepatitis, all may be associated with ascites. Intestinal obstruction in quite a proportion of cases makes serum collect in the abdomen. None of these things are common or important. None of them seems to be long here.

What does the diagnosis of cirrhosis rest on? First, on the exclusion of the other common causes of ascites. Second, on the presence of enlarged superficial veins of the abdomen and chest. Thirdly, on an alcoholic history which in spite of all jokes still holds as an important element in the etiology of these cases. What important symptoms or signs are absent? She never vomited blood. That does not prove that it is not cirrhosis. We do not feel the spleen. If our diagnosis is correct the spleen ought to be enlarged, and we have to say that there was something peculiar about the examiner or about the patient whereby her spleen was not felt.

A STUDENT The decrease in the size of the liver under observation,—is that a sign?

DR CABOT No, I have never seen it. I have often thought I ought to see it. I have often followed cirrhosis of the liver expecting to see it. I do not know why not, but you do not see it. I have seen post mortem very small livers, normal sized livers and very big livers with cirrhosis. We saw early it is big, later small, but I know no case on record which has been followed in which the liver got smaller as the case got worse.

A STUDENT At first it is two fingerbreadths below the ribs and later at the border.

DR CABOT They did not say anything about the upper border in the early examination. We have got to be shown that the conditions are just the same as to the amount of ascites present. But this may be a case in which one says the liver got smaller. It will not surprise me at all if Dr Mallory says it was big.

A STUDENT Can you rule out nephritis?

DR CABOT The urine is enough. I think to rule out nephritis.

A STUDENT How frequently do you have jaundice?

DR CABOT I think about thirty-three per cent of the cases have it. Most cases do not have it.

A STUDENT Wouldn't you expect more of a constitutional reaction with cirrhosis?

DR CABOT Do you mean, isn't it queer the

duration was not greater? We do not expect these patients to feel sick. Often they feel very well. We cannot draw any conclusions from her not feeling sick.

A STUDENT Is the leukocyte count of 14,000 normal?

DR CABOT No, I believe not. But she had been tapped several times. That would be enough to account for it.

A STUDENT Do you think it is syphilitic cirrhosis?

DR CABOT No, not so far as I know. There may be a syphilitic lesion in another part of the body, but I do not know the difference clinically between syphilitic cirrhosis and any other kind.

A STUDENT How do you explain the loss of weight and strength?

DR CABOT Think of the amount of valuable fluid taken out every time a tap is taken. That is a great drain.

A STUDENT What was the immediate cause of death?

DR CABOT I cannot say. We say exhaustion, cachexia. It is simpler merely to say she died. We do not know. In some cases there is a definite nervous element, definite evidence that the brain is poisoned by toxins which are not excreted through the liver, some evidence of "choleemia", but there is no reason to think it here. Why she died now rather than next year is a very proper question, but I cannot answer it.

A STUDENT Do you think the patient showed anemia?

DR CABOT The only record I have before me is 55 per cent hemoglobin. Most cases do show anemia. It is a perfectly probable thing to expect.

A STUDENT What was the cause of the absence of eye reflexes?

DR CABOT A good many people at that age do not have eye reflexes. The pupils become stiff. I cannot go further into it than that.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Cirrhosis of the liver
Ascites
Slight general edema
Decubitus

DR RICHARD C. CABOT'S DIAGNOSIS

Cirrhosis of the liver
Ascites
Chronic passive congestion of the spleen

ANATOMIC DIAGNOSES

1 Primary fatal lesion

Toxic cirrhosis of the liver

2 Secondary or terminal lesions

Ascites
Chronic passive congestion of the spleen
Arteriosclerotic degeneration of the kidneys
Edema of the left lower extremity

be that All we know is these two facts, enlargement of the abdomen and the use of alcohol

We could hardly use this case in a temperance lecture, because at sixty-six she had the finest of health in spite of that history of the use of alcohol

NOTES ON THE PHYSICAL EXAMINATION

We should not pay any attention to the cardiac impulse being outside the nipple. The heart was presumably pushed up by whatever was in the abdomen. Of course the heart is very often pushed up, swung on its pivot at the base so that the apex would go out farther than it should. It ought to be distinctly outside the nipple without being enlarged, since the diaphragm is high. It may turn out that there are other reasons in the heart for its going to the left. But if the abdomen is notably large it may well be that the heart is not

I feel that this question of the loudness of the second sound is not so important as we used to consider it. It is not very important whether the pulmonic second sound is louder than the aortic second or the aortic than the pulmonic. In the first place they vary at different ages. In childhood the pulmonic is louder, as you get towards advanced life it is the other way. I do not think it is at all certain that the sound we hear on the left side of the sternum is always the pulmonic second. I have seen cases in which I thought it was the aortic second sound which was heard best on the left side of the sternum. I think it is of little interest. In the first edition of my *Physical Diagnosis* I laid great stress on the accentuation of the pulmonic second in connection with mitral disease. But there are a great many cases of mitral disease that do not have it. Doubling of the second sound is of far more value as a sign of mitral disease than accentuation. The doubling of the second sound, especially at the apex, is not an important symptom at all. We cannot bank on it, but we can bank on it more than on accentuation. Accentuation of the aortic second sound is what we ought to get in hypertension and arteriosclerotic aorta. Often we do, often we do not. If we are counting on it for confirmation of a doubtful diagnosis we are apt to lean too heavily on it. It is a weak support in contrast with more reliable things such as Corrigan pulse, which is a very reliable sign as things go. If you feel it in a cardiac case it usually proves aortic regurgitation.

We can have tremendous arteriosclerosis in the arteries of the heart and relatively little in the other arteries of the body. I do not believe anybody knows why it is sometimes localized in one part of the body, why we sometimes find a tremendous lot in the renal arteries, sometimes in the coronary arteries, sometimes in the arteries of the arm. We cannot assume because it is present in the brachials that there-

fore it is present also in the heart or elsewhere.

The fluid wave is a very reliable physical sign.

Two things are making us think of ascites and probably cirrhosis.

In general the study of the sediments from abdominal taps has yielded extraordinarily little information so far as I can remember. There is value in knowing whether we have high or low gravity fluid. When we get fluid with a gravity of 1.018 to 1.030 it makes us think of tuberculous peritonitis or a condition secondary to malignant disease. We get a gravity like this in disease of the heart, kidney or liver. Under the conditions present here it is very likely liver. The question of the cell count in abdominal fluid is entirely different from that in spinal fluid, in which it is very important. It does not make any important difference that I know of in an abdominal tap.

The chief thing to notice is that she is accumulating that fluid very fast. That has a real diagnostic significance. The fluid accumulates slowly in tuberculous peritonitis. Tapping in tuberculous peritonitis cures not the tuberculosis, but the ascites. Often you can tap once and never tap again. In general obstructive ascites due to malignant disease or cirrhosis of the liver, fluid comes back quickly, as this does.

(Second admission.) I should like to be sure that there were not cataracts in both eyes before. They may have been looking with more care this time. A reduplicated first sound at the apex is a useless sign. We get nothing out of knowing it.

The protrusion of the umbilicus is significant of ascites. It should be a real depression, not a mound.

In general we have this history of a patient's coming back again and again to be tapped in only one disease. They do that until they get so weak that they do not go out. In malignant disease we should not generally find that the patient is strong enough to come back again often for tapping. This is the ordinary history of cirrhosis of the liver.

You may believe if you like that those artery walls have changed since the last time, but I do not.

The umbilical hernia has increased from what it was before. It is a question of degree.

The blister on the ankle was presumably due to edema forcing the skin up.

DIFFERENTIAL DIAGNOSIS

The best way to take up the case is to list the usual causes of ascites. They are (1) heart disease, (2) kidney disease, (3) cirrhosis of the liver, (4) tuberculous peritonitis, (5) malignant disease with obstruction. You can go on indefinitely, but those are the only common causes. We can rule out all but one. If she had had malignant disease we ought to have felt some lump somewhere. The character of the fluid rules out tuberculous peritonitis. There is

DISCUSSION

BY WILLIAM PEARCE COLES, M.D.

NOTES ON THE HISTORY

This would seem an acute infection that did not appear from this history to be perhaps completely localized.

Evidently this patient was in a state of more or less shock from his acute infection whatever that was.

The blood pressure is not recorded.

NOTES ON THE PHYSICAL EXAMINATION

The lung signs show fluid there of some sort due to his sudden illness. In other words there were shifting signs in the chest indicating fluid that was not fixed or encapsulated.

With an apparent acute infection such as this from his white count we might argue that his response to the infection was pretty good but that is belied by our clinical findings higher up. He was too sick.

A negative Widal at this stage certainly would not mean much to us in excluding a typhoid infection with respiratory symptoms, marked in the beginning. It is too early.

If this vomitus was direct from his stomach without admixture of sputum on the way up it seems as if that should mean something definite in relation to this acute infection whatever it was. The lung signs, such as they are fluid and then a strongly positive guaiac, seem to indicate something going on below in combinations which probably connote something rather out of the ordinary. With all that seeming trouble in his lungs his respirations are normal. There seems to be fluid there. There does not seem to be consolidation and that is a point in favor of there being nothing further in his chest in the way of a pneumonia.

DIFFERENTIAL DIAGNOSIS

We have a man coming in with a short history, intensely ill with signs of more or less shock and signs in his lungs indicating fluid which it seems had not been there for a very long time. As we go over the very first part of the history we note his occupation, an operative in a hair factory. I think Dr. Lord will say that in certain cases perhaps influenzal pneumonia of the type that was seen in this hospital and elsewhere in 1917 and 1918 or an influenza bronchitis might give symptoms similar to these. But we have something in the stomach if that guaiac was positive, which we would not be apt to get in those cases. If one were in a country where there has been plague—there has been plague in California—with such a fulminating overwhelming infection with those signs, I should imagine that bubonic plague might give similar symptoms.

Dr. Lord has said that he would be glad to say a few words about this unusual case.

DR. FREDERICK T. LORD: Regarding the history it would be desirable to know the characterization of his pain to know if with the cough there was any sputum. The physical examination suggests as already noted the presence of fluid in the right chest. One might go further however and say that it also suggests the presence of air because one does not expect to have such obvious shifting of fluid alone. The amount of shifting which occurs in fluid alone in the pleural sac is not sufficient to enable one readily to determine the change by physical signs whereas when there is both air and fluid there is a very marked shifting. One would not expect however in the presence of an air and fluid to have the fremitus normal. We should like also to have his temperature chart. It would be desirable of course to know the result of culture of the fluid. It would be desirable to have an examination of the sputum, the results of the blood culture and if the patient were seen today undoubtedly there would have been an X-ray and the problem would have been partially solved. But with the data at hand it does not seem to me possible to go further than to say that he has an acute respiratory infection with bronchitis and pleurisy with effusion with questionable pneumothorax and pneumonia.

DR. COLES: I wonder if anybody after simply reading over the first two lines and a half wishes to commit himself to a tentative diagnosis?

A PHYSICIAN: Does not the inhalation of the dust in a hair factory give rise to tuberculosis even to other illness?

DR. LORD: Any dust contaminated with tubercle bacilli may cause tuberculosis. The inhalation of dust alone may give rise to a condition which we call pneumoconiosis but not to this picture and desperate illness.

BACTERIOLOGICAL REPORT

Culture from the chest fluid showed anthrax bacillus.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Pneumonia?
Bronchitis
Pleural effusion
Cardiac failure

ANATOMIC DIAGNOSES

1. *Primary fatal lesions*
Septicemia bacillus of anthrax
(Pulmonary anthrax)
Areas of hemorrhagic necrosis in the trachea and lungs
Acute adenitis of the tracheal and bronchial lymphatic glands with hemorrhagic necrosis
2. *Secondary or terminal lesions*
Hydrothorax
Soft spleen
Small infarct in right kidney

3 *Historical landmarks*

Slight chronic pleuritis
Slight arteriosclerosis
Emphysema of the lungs
Chronic hyperplasia of the spleen
Small fibroma of the uterus
Scoliosis

DR TRACY B. MALLORY The patient had an atrophic cirrhosis of the liver, which weighed 975 grams and was markedly adherent to the diaphragm and omentum. The surface was finely hobnailed, the general consistency greatly increased and there was very evident fibrous reticulum surrounding islands of liver tissue. Microscopically it showed complete destruction of the normal lobular arrangement, and very marked fibrosis. It was not infiltrated with fat, as the vast majority of the so-called alcoholic livers are. I have not been able to find any alcoholic hyaline in the sections, although the hematoxylin and eosin stain done at this time is not the most suitable one for determining this type of cellular degeneration. The spleen, as Dr Cabot predicted, was slightly enlarged, 231 grams about 100 grams above normal. The kidneys were somewhat small and microscopically did show a trace of glomerulonephritis, nothing of very great significance, however.

The heart was small. It weighed 193 grams. The valves, myocardium and coronary arteries were entirely negative.

DR CABOT How much arteriosclerosis was there?

DR MALLORY There was very slight arteriosclerosis in the aorta, a considerable amount in the larger branches of it. The renal arteries are not mentioned.

CASE 14032

AN ACUTE INFECTION WITH BLOODY FLUID IN THE RIGHT PLEURAL SAC

MEDICAL DEPARTMENT

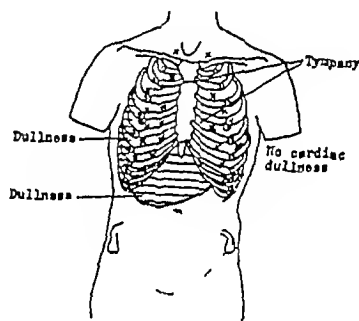
An Irishman twenty-eight years old, an operative in a hosiery factory, came to the Accident Room June 24, 1907 for relief of an acute pulmonary condition. He was too weak to give a satisfactory history.

He was in fair health until a week before admission. Then he had malaise pain in the legs and generalized all over the body, headache, vomiting, fever and cough. Since that time he had been in bed ill, short of breath and in much pain. The morning of admission the pain settled in his abdomen, shooting at times into his throat. For the past three hours he had been very short of breath. His bowels were constipated.

There is no past history except malaria five years before admission.

Clinical examination showed a fairly nour-

ished man looking extremely ill with cold and sweating skin and extremities. There were no enlarged glands. The apex impulse of the heart was not seen or felt. The cardiac dullness was not made out. The heart sounds were barely audible just inside the nipple. No murmurs were heard. The pulses were equal, regular, synchronous of poor volume and tension. The artery walls were not palpable. The right chest moved less than the left. The latter sagged a little. The lung signs changed a great deal with change in position. Respiration was harsh over the whole left chest, with prolonged expiration. There was no dullness or change in fremitus except in the midaxilla, where at times there was dullness. Over the whole chest were many coarse and medium moist râles. With the patient lying on his back there was tympany over the right chest from the midaxillary line to the edge of the ribs and to the median line, obscuring the liver dullness. There was dullness in the axilla as shown in the diagram. With the



patient on his left side the dullness in the right axilla was replaced by tympany, and dullness appeared over the liver in front to the fourth rib and to the lower right back. There was neither bronchial breathing nor change in fremitus. Scattered over the whole right chest were many medium and coarse moist râles. The abdomen was normal except for the dullness shown in the diagram. The liver boundaries were not made out. The external genitals, pupils and reflexes were normal.

Urine not obtained. Blood hemoglobin 95 per cent, leucocytes 28,000. Widal negative. Vomitus, guaiac strongly positive.

Temperature 98° to 101.6°, pulse 92 to 107, respirations normal.

The right chest was tapped and 60 ounces of slightly cloudy blood tinged fluid withdrawn, alkaline, specific gravity 1.016, albumin 2.5 per cent, smear, no bacteria found, in a count of 200 cells, 60 per cent polynuclears, 33 per cent endothelial cells, 7 per cent lymphocytes, a few cells resembling plasma cells, all cells in a good state of preservation. A culture was made but was not reported before death.

Stimulation had no effect on the heart. The patient soon died of cardiac failure.

DISCUSSION

BY WILLIAM PEARCE COLES, M.D.

NOTES ON THE HISTORY

This would seem an acute infection that did not appear from this history to be perhaps completely localized.

Evidently this patient was in a state of more or less shock from his acute infection, whatever that was.

The blood pressure is not recorded.

NOTES ON THE PHYSICAL EXAMINATION

The lung signs show fluid there of some sort due to his sudden illness. In other words there were shifting signs in the chest indicating fluid that was not fixed or encapsulated.

With an apparent acute infection such as this from his white count we might argue that his response to the infection was pretty good but that is belied by our clinical findings higher up. He was too sick.

A negative Widal at this stage certainly would not mean much to us in excluding a typhoid infection, with respiratory symptoms, marked in the beginning. It is too early.

If this vomitus was direct from his stomach without admixture of sputum on the way up it seems as if that should mean something definite in relation to this acute infection, whatever it was. The lung signs, such as they are fluid and then a strongly positive guaiac, seem to indicate something going on below in combinations which probably connote something rather out of the ordinary. With all that seeming trouble in his lungs his respirations are normal. There seems to be fluid there. There does not seem to be consolidation and that is a point in favor of there being nothing further in his chest in the way of a pneumonia.

DIFFERENTIAL DIAGNOSIS

We have a man coming in with a short history, intensely ill with signs of more or less shock and signs in his lungs indicating fluid, which it seems had not been there for a very long time. As we go over the very first part of the history we note his occupation, an operative in a hair factory. I think Dr. Lord will say that in certain cases perhaps influenzal pneumonia of the type that was seen in this hospital and elsewhere in 1917 and 1918, or an influenza bronchitis might give symptoms similar to these. But we have something in the stomach if that guaiac was positive, which we would not be apt to get in those cases. If one were in a country where there has been plague—there has been plague in California—with such a fulminating, overwhelming infection, with those signs, I should imagine that bubonic plague might give similar symptoms.

Dr. Lord has said that he would be glad to say a few words about this unusual case.

DR. FREDERICK T. LORD: Regarding the history it would be desirable to know the characterization of his pain to know if with the cough there was any sputum. The physical examination suggests as already noted, the presence of fluid in the right chest. One might go further however and say that it also suggests the presence of air because one does not expect to have such obvious shifting of fluid alone. The amount of shifting which occurs in fluid alone in the pleural sac is not sufficient to enable one readily to determine the change by physical signs, whereas when there is both air and fluid there is a very marked shifting. One would not expect however in the presence of an air and fluid to have the fremitus normal. We should like also to have his temperature chart. It would be desirable of course to know the result of culture of the fluid. It would be desirable to have an examination of the sputum, the results of the blood culture and if the patient were seen today undoubtedly there would have been an X-ray and the problem would have been partially solved. But with the data at hand it does not seem to me possible to go further than to say that he has an acute respiratory infection, with bronchitis and pleurisy with effusion with questionable pneumothorax and pneumonia.

DR. COFFEY: I wonder if anybody after simply reading over the first two lines and a half wishes to commit himself to a tentative diagnosis?

A PHYSICIAN: Does not the inhalation of the dust in a hair factory give rise to tuberculosis, even to other illness?

DR. LORD: Any dust contaminated with tubercle bacilli may cause tuberculosis. The inhalation of dust alone may give rise to a condition which we call pneumoconiosis but not to this picture and desperate illness.

BACTERIOLOGICAL REPORT

Culture from the chest fluid showed anthrax bacilli.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Pneumonia?
Bronchitis
Pleural effusion
Cardiac failure

ANATOMIC DIAGNOSES

1. *Primary fatal lesions*
Septicemia bacillus of anthrax
(Pulmonary anthrax)
Areas of hemorrhagic necrosis in the trachea and lungs
Acute adenitis of the tracheal and bronchial lymphatic glands with hemorrhagic necrosis
2. *Secondary or terminal lesions*
Hydrothorax
Soft spleen
Small intaret in right kidney

DR TRACY B. MALLORY Both pleural cavities were found to contain slightly hemorrhagic fluid. The presence of air is not mentioned, however. The pericardial fat was found to be diffusely infiltrated with a thin slightly bloody fluid and there was a tendency in some of these areas to blackish discoloration. The bronchial and tracheal lymph glands were greatly increased in size. One mass just below the bifurcation of the bronchi densely matted together measured six by three by three centimeters, a huge mass that one could hardly imagine in anything except a tumor or tuberculosis. The trachea and bronchi showed hemorrhage, inflammation, with also areas of blackish necrosis. The lungs were free from actual consolidation, but many minute irregularly shaped reddish black areas were found scattered throughout them. The heart, liver and spleen was negative. The right kidney showed a small infarct.

Microscopic examination of the pleural fluid removed while the patient was alive showed a great many large Gram-positive bacilli, few of which contained spores. They had very definite capsules. That is the typical appearance of anthrax in body fluids, and further cultural characteristics confirmed the diagnosis.

At necropsy the hemorrhagic exudate in the pericardial fat, the exudate in the trachea and bronchi and in the lungs themselves showed very numerous anthrax bacilli. The stomach was said to be normal.

DR YOUNG Is there anything besides a fulminating sepsis and anthrax which would give this picture?

DR LORD Plague

DR YOUNG Did you ever see plague in Boston?

DR LORD No, I never have. The intensity of the disturbance and the presence of pleural fluid in a hair worker should suggest anthrax. The condition however has become so rare that one is likely not to have the proper suggestion come to him.

DR COUES This is a very unusual case, the only one of pulmonary anthrax in this hospital. It is too hard for anybody. The point is that recent literature and studies are not common. A man seized with such symptoms as this man had, with the history of being an operative in a hair factory, brings up the question whether it is not anthrax, and whether the patient should not be given large doses of antianthrax serum and his life perhaps saved.

I will speak briefly on another case which it will be seen has a bearing on the subject.

CASE 14033

AN INFLAMMATORY LOCALIZED LESION ON THE FACE WITH MARKED EDEMA

SURGICAL DEPARTMENT

A man of fifty, a rag-worker, entered April 23, 1901

Four days before admission he noticed a small pimple on his right cheek. The following day there was slight swelling but no pain. It had been treated with local applications. The day before admission the whole right side of his face was much swollen and the eye partially closed. He still had no pain and no constitutional symptoms.

On clinical examination the whole right side of the face was much swollen, the edema extending to the neck. The eye was closed. In the center of the cheek was a small pustule covered with moist crusts. The heart and lungs were negative.

A cover glass preparation made from the serum which exuded from the lesion on the cheek was found to contain very many large bacilli. Some of these had well marked capsules and some of them appeared to be composed of shorter segments separated by narrow intervals. The ends of these segments in some instances were square and not rounded off.

A culture on blood serum made from the exudate on the surface of the lesion and from some dried serum in the neighborhood showed after twenty-four hours a confluent growth covering the surface of the medium. In a dilution tube made at the same time many colonies were present, consisting chiefly of two kinds. One kind was large, grayish, finely granular and dry. The other kind of colony was smaller and whiter and resembled the colonies of cocci.

On the surface of each of two blood serum tubes inoculated with material obtained from the operation wound a moderate number of large colonies developed. These colonies were large, grayish, finely granular and dry. Microscopic examination of one of these colonies showed large bacilli appearing generally as chains of short segments, often square ended.

Operation was done the day of admission. In the afternoon the pulse began to go to pieces. The patient still had no pain, but was somewhat nauseated. He was given strychnia, subacetates and brandy, and rallied slightly. At midnight the pulse rate had increased to 110 and the pulse had gone all to pieces. The respiration was somewhat labored. The edema had extended down the neck. He vomited several times. He went from bad to worse and died the following morning.

DISCUSSION

BY WILLIAM PEARCE COUES, M.D.

This is too much swelling for an ordinary pimple. As a rule ordinary boils and small furuncles do not give such edema as this. The edema extending to the neck is another unusual thing which would put us on our guard.

We should like to know a little more about that pustule if we could. If they had told us that there was a crater in that pustule with a black eschar in the crater we should be pretty sure to make our diagnosis of anthrax, and any-

how we would have a culture and a smear before anything was done

These bacilli were similar to those that Dr Mallory told us about in the lung

BACTERIOLOGICAL REPORT

The large grayish colonies grown from the exudate on the surface of the lesion had the appearance of colonies of the anthrax bacillus

PRE OPERATIVE DIAGNOSIS

Anthrax

OPERATION

Gas and ether The face was quickly scrubbed The pustule with about an inch and a half margin of skin and subcutaneous tissue was rapidly dissected out The surface was cauterized with the actual cautery A large sulphaphthol poultice was applied to the face The patient was sent to the ward in good condition.

BACTERIOLOGICAL REPORTS

The colonies grown from material from the wound had the appearance of colonies of the anthrax bacillus

A brown mouse inoculated subcutaneously at the root of the tail with a portion of one of the blood culture colonies at 2 p m on April 23 was found dead on the morning of April 24 At the necropsy some enlargement of the spleen was found Microscopic examination of a cover glass from the spleen showed enormous numbers of square ended capsule bearing large sized bacilli, usually occurring in chains

A culture on blood serum said to have been prepared from the blood of one of the arm veins obtained with a sucker tube during the operation developed four colonies of large size These were dry, finely granular and grayish Microscopical examination of one of these showed bacilli like anthrax bacilli

BACTERIOLOGICAL DIAGNOSIS

Infection with the anthrax bacillus

FURTHER DISCUSSION

The whole lesson of these two cases of anthrax, so far as the surgical end of it goes, is the question of operating on anthrax, the excision of anthrax The reason I thought this would be an interesting subject for discussion at this exercise was not that the serum treatment is not pretty well recognized now in America and used largely, but because it is in contradistinction to surgical excision, which should never be done But the point is that many of the modern textbooks still advocate the operative treatment of anthrax An authoritative book published in 1927 advocates operation with serum treatment, and the standard surgeries of recent date are advising operation, excision of the pustule

In 1918 Scholl made some very interesting studies on anthrax in this hospital I wish to read his statistics and add those that I have found since, and speak very briefly about the general feeling about anthrax It is an interesting fact that no cases are recorded in the hospital index from 1923 to date, and that the deaths from anthrax in Massachusetts from 1915 to 1920 were thirty, and from 1921 to 1924 only four So that there are fewer cases and fewer deaths

ANTHRAX

SCHOLL'S STATISTICS

In 1920 Scholl reviewed 51 cases of anthrax occurring at the Massachusetts General Hospital from 1888 to 1918 His statistics are as follows

COMPARATIVE RESULTS OF OPERATIVE AND NON OPERATIVE TREATMENT

Total cases	51	
Total deaths	7	13.7 per cent
Cases treated surgically	9	
Deaths	4	44 per cent
Cases treated without surgery	42	
Deaths	3	7 per cent.

Only one of these cases was treated with serum This was among those that recovered

Cases at the Massachusetts General Hospital from 1918 to 1922 inclusive (No cases are recorded from 1923 to date, 1927)

Total number of cases	11
Cases with operation	0
Cases without operation	11
Recovered	11
Mortality in this series	0

SCHOLL'S CASES

No operation	42
Less one given serum	1
	41
Plus cases since 1918 (no operation)	11
	52
Deaths	3
Mortality	5.77 per cent.

OTHER DATA ON CASES SINCE 1918

Sex	all males
Location of anthrax pustules	
Face	4
Neck	3
Arm	4
Source of infection	
Shaving brush	3
Hide handling	4
Tanning	1
Wool pulling	1
Leather handling	1
Fleshing hides	1
Average stay in hospital	16.4 days
All cases in this group bacteriologically anthrax	

*Scholl Albert J Anthrax comparison of surgical and nonsurgical methods of treatment J A M A 1920 Vol 742 page 1441

DEATHS FROM ANTHRAX IN MASSACHUSETTS SINCE 1915

1915—4	1920—3
1916—5	1921—0
1917—11	1922—1
1918—5	1923—2
1919—2	1924—2

This with a conservative treatment, physiological rest, forcing of fluid, and no surgery. That surely makes a very striking mortality percentage compared with the other cases. That is a very good mortality, and it compares very favorably with many of the statistical groups that I have found with serum treatment. But we cannot tell how the cases are going to go. The Regans at the Kingston Avenue Hospital in New York have studied and treated anthrax for a good many years and have written the best articles from the surgical standpoint. I think their work is the most authoritative in America. In the first place they give a short history, and tell us how rare serum treatment was until lately. Then they give statistics. They instituted I think in this country the local treatment of the lesion with antianthrax serum and then with large doses intravenously, depending in amount on the severity of the anthrax infection.

I think that the serum ought to be used in all cases because we cannot tell whether a case is going to go well or suddenly, in eight or ten hours, go badly and die. I have found in the literature cases, all small groups, as follows:

Four cases reported treated expectantly, no serum, all died.

Fourteen cases, no serum, expectant treatment all died. I do not know why that should be. Whether there was lack of care and rest I do not know. But there we have these small groups of one hundred per cent mortality with expectant treatment. In our records of the cases here, the few that died without operation would suddenly go bad. I remember one case of a lesion on the neck, within a few hours the patient got sicker and sicker and in a few hours died. I think the serum is safe. No harm has come so far as I know from using it, and I believe it ought to be used on every occasion.

There is one other thing very important that is that we all should know anthrax when we see it in the Out Patient Department and elsewhere, and think of the possibility of a queer looking funicle or boil turning out to be that. Three or four cases have come to my attention where there have been boils on the neck or face which have ruptured, leaving a little bit of black eschar in the crater of the boil. Pus has not come out, and it looked for all the world like anthrax, except that we have not the blebs around the edges. But in such a case as that we do not want to excise or cut around it but wait and get a smear. If we operate and excise an anthrax lesion the chances of recovery are infinitely less. If we wait in such questionable cases and have

an examination we shall be sure, and if we find it is a typical boil with a hemorrhage in the center we have done the right thing by waiting.

Dr. Lord: Regarding the pulmonary form of anthrax, this was very much more frequent years ago than now, and perhaps the best report of the disease was given by Eppinger. Eppinger was able to collect nearly one hundred cases from 1865 to 1890, occurring in paper factories, among rag sorters, etc. The pulmonary form in recent years is very rare.

The pulmonary findings from the pathologic point of view are regularly the presence of pleuritis and a pneumonia which may seem to be lobar but is actually lobular. The pleural infection leads to the accumulation of a serofibrinous exudate on one or both sides, and atelectasis has been noted in a number of necropsies, also inflammatory softening of the lung tissue. A conspicuous feature from the pathologic point of view is the swelling of the bronchial lymph glands, very marked in this case. There is also parenchymatous swelling of the liver, kidney, and heart, and a splenic tumor, and lesions of a significant nature in the upper respiratory tract, —catarrhal disturbances and in certain cases pustules in the larynx and the trachea.

Regarding the symptoms of the pulmonary form there are in certain instances prodromata: a period of prostration with catarrhal disturbance in the eyes and nose, dry cough, usually a sudden onset with a respiratory localization with a chill or chilliness, immediate rise of temperature, headache, weakness and extreme prostration. The absence of delirium is striking. On the part of the lungs the symptoms are cough with a colorless mucoid tenacious sputum, often blood streaked or even prune-juice, shortness of breath, stitch in the side as in ordinary pneumonia, and rapid respiration. Cyanosis is striking and usually there is marked elevation of the pulse. On physical examination of the chest the signs may be wholly those of bronchitis. Involvement of the pleura may often be made out, and at times pneumonia. The diagnosis of anthrax pneumonia may be made by finding the organism in the sputum, in the pleural fluid or by blood culture.

The outlook is grave. Death usually takes place within a few days, one to two, or at most by the sixth. A small number of cases recover, and this recovery may take place in five to twenty days. Convalescence is very slow.

Treatment of the pulmonary form should be by serum, in view of the evidence in its favor as a preventive and curative measure in animals. The serum is capable in animals of giving rise to recovery when the dosage of anthrax bacilli is such that it would otherwise be fatal, and in view also of the evidence of the successful serum treatment of anthrax septicemias in man. Symmers* of New York has reported from the

*Regan, Joseph C. Am. J. M. Sc. 19.1 Vol. 16, page 496
Regan, J. C. and C. J. A. M. A. June 1919, page 1734
Regan, J. C. and C. Am. J. M. Sc. June 1919, page 782

*Douglas Symmers, Serum treatment of anthrax septicemia
Annals of Surgery, Vol. 75, page 663, 1912

literature and his own experience seven recoveries with the use of antianthrax serum in anthrax pustule complicated by septicemia due to anthrax bacilli. The initial dosage recommended is 150 to 200 cubic centimeters intravenously followed by 40 cubic centimeters every four hours until the blood culture is negative or death intervenes. It would be desirable in variably in the use of the serum for the local disease and for the pulmonary or any other form of the disease first to determine the sensitiveness of the patient to horse serum and to use a desensitizing dose as in the treatment of pneumonia with antipneumococcus serum.

DR TRACY B. MALLORY. I do not know that there is very much that I can say about the pathology and bacteriology of anthrax because in spite of the fact that perhaps no disease has received more attention and over a longer period of years I think we are still very far from understanding the pathology of the disease. Of course it is one of the very first diseases in which prophylaxis was successful in the hands of Pasteur.

The diagnosis is made bacteriologically very easily. The organisms are characteristic morphologically, large Gram-positive bacilli. One can sometimes make out spores. One can quite regularly find capsules when the smears are made directly from animal fluids. The growth in culture media is not particularly characteristic but the crucial test comes by inoculation in a mouse. With a particularly virulent strain the mouse can be killed with a single bacterium and with a strain of ordinary virulence freshly isolated from a human case five or six are sufficient to produce a fatal result. So far as I know no one has ever proved the formation of a true toxin by the anthrax bacillus. I do not think however that it is utterly impossible that such is the case. The serum is presumably an antibacterial serum of the type of the pneumococcus Type I and the antinephrococcus serum.

A great deal has recently been written about anthrax by numerous French and other writers particularly Besredka and Plotz. They have made the statement that the only tissue susceptible to anthrax infection is the epidermis and cited some interesting experiments in proof of that. An extremely minute dose of bacteria five or six organisms in the skin will produce a fatal lesion in the mouse or guinea pig. If introduced intravenously or intraperitoneally and elaborate precautions are taken that not a single drop gets into the skin wound through which the injection is made the animals will withstand a hundred lethal doses as measured by the skin doses. Those facts are correct but I do not believe Besredka's explanation is correct. As a matter of fact the same experiments were performed nearly thirty years before by Noetzel,* a German with extremely careful technique. He dissected down on a vein, then injected his fluid

and cauterized both ends of the vein so that not a single drop of blood would escape into the wound. He found that fifty to a hundred lethal doses could quite regularly be withstood. If, however after doing that he injured tissues anywhere or if when he gave it intraperitoneally he gave a dose of morphine sufficient in amount to paralyze peristalsis then a focus developed and from that focal infection the infection spread and produced the death of the animal. I think that the probable explanation of this is that when the injection is made intraperitoneally or intravenously the organisms are suddenly distributed over a huge phagocytic endothelial surface they are taken up with such rapidity that no focus of infection occurs and the animal recovers. If on account of injury at any spot a group of organisms gets into the small localized area where any trauma has occurred to produce necrosis of a single cell then the conditions are right for the bacteria to develop and from the focal infection a general one invariably develops. The application of this to the pathology of human cases is not yet clear. We do not see enough of these cases in present days to have much chance to study them. But I think one suggestive inference to be drawn is that a positive blood culture of anthrax bacillus is not necessarily as extremely bad a prognostic sign as one might expect. I do not believe that the organisms simply circulating in the blood do very much harm unless they localize somewhere else. If they produce focal lesions in the lungs, liver, kidneys or spleen, then the process becomes serious.

DR COTES. Has any work been done abroad in immunizing factory or leather workers or any other human beings with anthrax?

DR MALLORY. I do not know of any.

DR LORD. I should like to say that anti-anthrax serum from the Bureau of Animal Industry is available.

DR COTES. I think that some of the large product houses make it now too.

A PHYSICIAN. Was the blood positive on this pulmonary case?

DR MALLORY. It was post mortem.

DR COTES. I think not before death.

A PHYSICIAN. What was the provisional diagnosis in the pulmonary case?

DR MALLORY. A question of pneumonia, bronchitis and pleural effusion.

A PHYSICIAN. How about the positive guinea pig? Were you able to account for that?

DR COTES. No. I asked Dr. Mallory and he was unable to find anything in the record. But I suppose in connection with that we ought to think of the possibility of something that has not been spoken of and that is intestinal anthrax. It does occur. So that it might be that there was that infection there, and the patient might have had intestinal anthrax too.

DIAGNOSIS

Anthrax.

The New England Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY
under the jurisdiction of the following named committee:

For Three Years

JOHN W. BARTOL, M.D. FREDERICK T. LORD, M.D.
CHANNING FROTHINGHAM, M.D.

For Two Years

HOMER GAGE, M.D. Chairman EDWARD C. STREETER, M.D.
EDWARD W. TAYLOR, M.D.

For One Year

WILLIAM H. RORBY, JR., M.D. ROBERT I. LEE, M.D.
ROBERT B. OSGOOD, M.D.

EDITORIAL STAFF

DAVID L. DUBALL, M.D. STEPHEN RUSHMORE, M.D.
REED HUNT, M.D. ILLINE ZINSNER, M.D.
JOHN P. SUTHERLAND, M.D. BENJAMIN WHITE, PH.D.
GEORGE R. MINOT, M.D. HENRY R. VIETS, M.D.
FRANK H. LAHEY, M.D. ROBERT A. NEE, M.D.
SHIELDS WARREN, M.D.

WALTER P. BOWEN, M.D. Managing Editor

ASSOCIATE EDITORS

GEORGE G. SMITH, M.D. WILLIAM B. BREED, M.D.
JOSEPH GARLAND, M.D.

THE NEW HAMPSHIRE MEDICAL SOCIETY

PUBLICATION COMMITTEE

D. E. SULLIVAN, M.D. EMERY M. FITCH, M.D.
JOSEPH J. CORR, M.D.

THE VERMONT STATE MEDICAL SOCIETY

PUBLICATION COMMITTEE

WILLIAM G. RICKER, M.D. C. F. DUTTON, M.D.
J. A. WARR, M.D.

SUBSCRIPTION TERMS \$5.00 per year in advance postage paid
for the United States Canada \$7.00 per year \$7.50 per year
for all foreign countries belonging to the Postal Union

Material for early publication should be received not later
than noon on Saturday. Orders for reprints must be sent to
the Journal office 126 Massachusetts Avenue

The Journal does not hold itself responsible for statements
made by any contributor

Communications should be addressed to The New England
Journal of Medicine 126 Massachusetts Avenue Boston Mass

SOCIAL ETHICS VERSUS MEDICAL ETHICS

THE Professor of Social Ethics at Harvard University has recently been quoted in the press as having stated before a lay audience that only nine out of some 215 known diseases exist for which the medical profession has remedies that are absolutely necessary for the life of the person. If one resorts to quibbling over terms an argument in favor of the exact truth of this statement may be made, and the professor specializes in exact truths. The knife is not absolutely necessary for the life of the patient with acute appendicitis or empyema, the malarial patient may survive without quinine or the victim of diphtheria without antitoxin.

The implication to be derived from a casual reading of this report, however, is that the need of a physician is real in only nine diseases, that the remaining 206 will cure themselves as a result of the benefit only of good nursing. Feeling that the professor of Social Ethics must have been misquoted by the newspapers, the

JOURNAL asked him to correct some of the apparent inaccuracies in the report, but the reply seems to indicate that he was not misquoted.

The exact truth, even if we admit that these statements were the exact truth, may frequently create distinctly false impressions if it is not properly interpreted and explained for the benefit of those who have not a detailed knowledge of the subject. Dr. Cabot's undenied statements certainly create the impression that he believes the medical profession to be of little value except in the specific instances of nine diseases. He does not qualify his statement by explaining that medical attention in many more diseases may make the difference between health and invalidism, between comfort and pain, between happiness and misery. He does not explain that medical attention and guidance may frequently be the means of averting disease and promoting the fullest enjoyment of health, he neglects to state that through the offices of the medical profession the public health is what it is, instead of what it might be, he neglects to state that there are twice nine diseases for which specific remedies exist which may cure, even if death is not always the alternative to cure he makes no mention of the many conditions in which surgery is actually a life-saving procedure.

In his remarks Dr. Cabot shows that he fails to appreciate or wilfully neglects to analyze for the benefit of the public the true scope of medicine in these modern days. A knowledge of medicine is gained with travail and employed with difficulty. It is designed for the good of the public and can reach the peak of its usefulness only through education of the public to understand and appreciate its manifold blessings. Dr. Cabot beyond others is in a position to aid in that education, for the public holds him as a prophet in the land, but his opportunity has been neglected, instead of teaching his following to avail itself of the opportunities opened to them, he has made statements which tend to create a feeling of distrust, of disillusionment towards the profession of which he is a member and which has in the past so often flocked to his standard.

VACCINATION

THIS year four bills were introduced in the Legislature dealing with vaccination. Three of these were introduced by Representative Ashton of Fall River on petition of N. F. Mason Padel of that city. House 595, entitled "an act to abolish compulsory vaccination" proposed that the present requirements be abolished whenever a parent or guardian expresses opposition to vaccination. This bill would do away completely with compulsory vaccination of children as a condition for school attendance.

House 596 and House 597 while nominally intended to insure the purity of vaccine virus really aim at all vaccination against smallpox.

House 793 introduced by Representative

Slater Washburn of Worcester would extend the existing provisions regarding the vaccination of children attending public schools to those children attending private schools. This would do away with a class discrimination now existing. The bill would further require the physician giving a certificate of exemption from vaccination to state his reasons and would make the certificate valid for one year only.

All of these bills were withdrawn before the time of the announced hearing. There will be no legislation upon the matter at this session. It will doubtless come up again when the newly elected Legislature meets next January.

The Massachusetts Medical Society has no intention of dropping the fight for more adequate vaccination laws. Under the able leadership of Dr. S. B. Woodward of Worcester the Washburn bill has been repeatedly advocated before the Committee on Public Health. Representative Washburn deserves unstinted praise for his splendid efforts in support of this public health measure. It has been passed by the House for three successive years. The Senate has defeated the bill. Some Senators favor the bill. Others are inconceivably opposed to it. A majority of this small body are either indifferent or are afraid to antagonize the active opponents of vaccination. The Medical Liberty League is constantly at work and at times is very actively at work against vaccination. The Washburn bill has not been enacted because of the indifference of the members of the Massachusetts Medical Society. As soon as physicians talk with their Legislators and convince them of the need and reasonableness of the vaccination of all school children their measure will be enacted. Representatives and Senators should be seen but primarily the work must be done with the members of the Senate. If we really desire this public health safeguard we must seek it. Indolence and indifference in the medical profession are reflected in the votes of the Senate.

RABIES

THERE should be no death from human rabies. That such a death should occur in an enlightened community is a serious reflection on the medical profession and on the public at large. No physician of standing should tolerate a supine attitude towards prophylactic treatment, especially in view of the fact that animal rabies is in the community and public opinion is not strong enough to back up the police and other protecting agencies in their attempt to wipe it out. In spite of the ninety-day muzzling law now in force, there have been many stray, and not a few rabid, dogs on our streets. The medical profession can greatly augment the efforts of the State Commissioner of Health by enlightening that part of the public with which they are in constant contact, their patients. Such measures help, sometimes far beyond our hopes, but let it also be known that no physician in

practice ever takes any steps other than the strongest urgings on his part to insist that all patients bitten by animals take the Pasteur treatment at once.

It has been the misfortune this winter, of one of our largest hospitals to have two cases of human rabies die within its walls. Both patients, one seventy and the other nineteen, died a death that can only be described as horrible. The families of these poor victims perhaps suffer the most, in view of the knowledge that the patient's one chance of life was not given to him. And yet, one hopes that the lesson is not in vain. Those associated with these deaths are hardly likely to forget nor are they likely, as time goes on to fail to use early Pasteur treatment in all cases of dogbite or to spread the knowledge that human rabies is a disease always fatal but made practically preventable by one of the greatest lovers of man and animals of modern times, Pasteur.

Let there be no more deaths from human rabies in New England!

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

BARRINGER, BENJAMIN S. M.D. Cornell University Medical College 1902 F.A.C.S. Surgeon at Memorial Hospital, New York, Consulting Urological Surgeon at Mary McClellan Hospital and Nvaack Hospital, member of the American Association of Genito Urinary Surgeons. His subject is "Carcinoma of the Prostate and Bladder" Page 117 Address 134 E 76th Street, New York City

LANE, EDWARD A. A.B., C.P.H., M.D. Cornell, 1916 District Health Officer Metropolitan District Massachusetts Department of Public Health, Assistant in Public Health Administration, Harvard School of Public Health. His subject is "Diphtheria Epidemic—Marlborough, August-November, 1927" Page 135 Address 546 State House, Boston

SWAN, CHANNING S. A.B., M.D. Harvard, 1923 Surgical House Officer Massachusetts General Hospital 1923-1925, Intern in Urology, Johns Hopkins Hospital 1925-1926, Assistant Visiting Surgeon to the Long Island Hospital Boston, Associated with Dr. J. H. Cunningham in the practice of Urology. His subject is "Functional Results After Prostatectomy" Page 137 Address 46 Gloucester Street Boston

VERMOOTEN, VINCENT B.A., M.A., M.D. Johns Hopkins University School of Medicine, 1923 Assistant in Genito-Urinary Surgery, Harvard University, Assistant Resident Surgeon, Peter Bent Brigham Hospital. His subject is "Grass in the Urinary Bladder" Page 139 Address Peter Bent Brigham Hospital, Boston

GHORMLEY, R. K., B.S., M.D. Johns Hopkins
1918 Assistant Orthopedic Surgeon, Massachusetts General Hospital, Instructor in Orthopedic Surgery, Harvard Medical School His subject is "Progress in Orthopedic Surgery" Page 141 Address 234 Marlborough Street, Boston

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY
Foster S. Kellogg, M.D. Frederick L. Good, M.D.
Chairman Secretary
Frederick J. Lynch, M.D., Clerk

What Is the Management of a Breech Presentation?

The fact of a breech is in itself presumptive evidence of some variation from the obstetric normal, beyond the abnormal position. Commonly this variation is a small pelvis, a low placenta is not infrequently encountered. A breech discovered, a careful examination should be made to determine the possible presence of some other condition carrying in itself a grave prognosis for child or mother. The higher foetal mortality of breech presentations is due frequently to the accompanying pathology. A breech delivery, properly conducted, in the absence of other pathology, is a relatively easy and safe delivery. It should always be borne in mind that a breech may be the first evidence encountered, of a multiple pregnancy.

The breech cases present an opportunity for nice obstetric judgment which case may be confidently allowed to proceed as a breech delivery, which should be delivered by another method. The relative disproportion cases present the difficult problem. The alternative delivery being a cesarean, the importance of a correct decision is increased.

The attempt before delivery, by external version, to convert a breech into a normal vertex has no practical value. The procedure itself is not difficult but the maintenance of the correct position is. Its employment ignores fundamental aspects of a breech presentation. An uncomplicated breech will deliver itself with probably not greater difficulty than would a vertex, while the breech, complicated by a small pelvis, or a previa, is obviously not greatly benefited by changing the presentation. A "primiparous breech" is often accepted as one of an increasing number of indications for cesarean. As a generalization this is not good obstetrics. Aside from the breech presentation there should be other indications to warrant delivery by section, a definitely determined disproportion, possibly a previa or a complicating neoplasm, would be definite section indications. The elderly primipara, or a delayed first stage, might represent a type of case with a relative indication for cesarean.

It is of practical importance in the management of breech cases that the family is fully informed of the possibilities and that it shares in the responsibility for border line decisions.

It being decided that a breech presentation may be safely allowed to proceed as such the second aspect of the management of a breech presents itself, the actual conduct of the breech delivery. In such a case the first general rule is to allow the delivery to proceed without interference as long as there is obvious progress. One should not ordinarily attempt extraction as soon as the presenting breech can be grasped, rather labor should be allowed to proceed until a well developed crowning has dilated, in considerable degree, the pelvic floor. With crowning obstetric ether is started for better control. The time when the breech no longer recedes in the interval between contractions is the correct time to begin traction. At this time the obstetric ether should be carried to primary anesthesia, the relaxation thus secured aiding materially in extraction. As traction on the breech is made, the legs should be left extended (to secure a greater dilation of the perineum), the line of traction should be parallel to the long axis of the mother's body, the foetus rotated if necessary, to keep the back anterior, as the shoulder girdle comes to the pelvic floor that shoulder most anterior should be rotated under the arch, traction at this time sharply downward, anterior rotation is sometimes advantageously aided by finger pressure under the shoulder. It is best, if possible, to secure complete delivery of the anterior shoulder by continuing downward traction alone rather than to secure its early delivery by hooking the arm out from under the arch. The anterior arm delivered, the body is rotated slowly in the reverse direction to bring the posterior shoulder anterior, traction sharply downward being continued. Its delivery is most advantageously secured by continued downward traction, this line of traction is necessary to most easily bring the after coming head to the low pelvis. Premature delivery of the shoulders is usually followed by premature upward traction with resultant disturbance of mechanism of the after coming head. The shoulders delivered, the hold is transferred to them, the foetal body held at right angles to the long axis of the mother's body. From this point the entire force necessary for continued descent of the head must be furnished by abdominal pressure. Flexion of the head is favored by the gentle traction of a finger in the mouth. If delay is encountered at this point, the perineum should be retracted by a Sims speculum, up to the baby's mouth, permitting inspiration if respiratory attempts begin. Delay at this point is usually the result of an incompletely dilated pelvic floor. The perineum retracted, sufficient time can be taken to complete this dilation without undue injury. Forceps to the after coming head, to complete delivery, should be resorted to rather than undue

traction on the shoulders. As soon as the mouth is over the perineal edge, sufficient time may be taken to reduce perineal injury to a minimum.

Questions of a similar nature to the above will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

BOSTON MEDICAL LIBRARY

NOTES ON CURRENT LITERATURE AND RARE BOOKS

The Boston Medical Library receives from the larger Boston hospitals a list of their operative work for each day. It is available here on the Bulletin board in the entrance hall or may be had by calling Kemmore 1617. This information is not available before nine o'clock A. M. of the day on which the operations are scheduled. The hospitals supplying this information are the Boston City Hospital, Massachusetts General and the Peter Bent Brigham. Others may be added later.

During the week of March 12th there will be exhibited in Holmes Hall the significant literature on Rabies for the guidance of those who wish to be informed. It is important that as much enlightened sentiment as possible be brought to bear upon this most important public health question. To assist in the achievement of this end the Library opens its doors to all whether layman or professional who desire to avail themselves of its resources.

In commemoration of the two hundredth anniversary of the birth of John Hunter which should have been celebrated on February 13th, those who are interested may find on exhibition the more important editions of his works in Holmes Hall at the Boston Medical Library from March 12th to 17th.

JOHN HUNTER 1728—1793

With two commemorative celebrations last year, those of Laennec and Lister and this year of Harvey and Hunter, opportunity has been offered to renew our acquaintance with the characters and activities of four of the master minds of medicine. A study of the life of John Hunter is interesting and instructive from several points of view. That there should have come from one family two men of such outstanding prominence in the same field of activity as William and John Hunter is in itself unusual. That in the family background there should have been nothing in its previous record that would predicate such an outcome makes this all the more remarkable, for though their forebears were stable Scotch families on both sides, distinguished for integrity and honesty, there had been no individuals conspicuous in the lines

along which these two men became famous. In fact the earlier years of John Hunter's life offered no hint of the direction in which his tastes would lead and certainly none of any exceptional abilities. He had no liking for books or scholarship, in fact ridiculed such interests and dropped his formal education at an early period. As a boy and youth it was out of door, country sports with a not unusual interest in natural history that seemed to attract him most. About the time he was seventeen he went to Glasgow to live with and work for a relative in the lumber business and for a time was employed as a cabinet maker.

At twenty he joined his brother William in London to help him with his dissections. He was surprisingly clever at dissecting and popular with the "Resurrection-men." His brother secured permission for him to "attend" at the Chelsea Hospital (1749) with William Cheselden and two years later (1751) he became a pupil of Percival Pott at St Bartholomews. He was chosen one of the "masters of anatomy" of the Surgeons corporation. In 1754 he entered as surgeon pupil at St Georges and for several months in 1756 he was house surgeon. In 1755 he matriculated at St Marys Hall, Oxford, but did not complete his course as he had no stomach for the classics. He was assisting his brother with his lectures as early as 1754. He was busy with numerous anatomical investigations on the lymphatic system, the veins, the placental circulation, the descent of the testis in the foetus and the nasal and olfactory nerves.

Because of ill health, in 1759, he took an ocean trip as surgeon for a naval expedition where he busied himself with a study of the coagulation of the blood. Later (1762) he gained experience valuable to him as a surgeon, in the British army in Portugal. He was also at this time interested in the habits of hibernating animals. He returned to London and set up as a surgeon in 1764, offering classes in anatomy and surgery but his diffidence and bad delivery made him a poor teacher and he never had many pupils. He obtained all the animals that died in menageries, etc., to study and fitted up a very complete (for the time) laboratory and museum. Whenever as much as ten guineas accumulated he used a portion of it to purchase animals or specimens. He was indefatigable in the pursuit of his surgical interests. Even a personal experience with a ruptured tendo Achilles in his own leg, gave him opportunity to make studies upon the repair of tendons (1767) that led to the development of our present day knowledge on this subject.

In 1766 he made his first venture in print. In 1768 he secured the position of Surgeon to St Georges Hospital which marked a very great increase in the size of his practice and on account of which he moved into larger quarters, vacated by his brother William. He took house pupils here, bound to him for five years for five hundred guineas. Among them was Jenner of whom he was very fond. In 1771 he published

GHORMLEY, R. K., B.S., M.D. Johns Hopkins, 1918 Assistant Orthopedic Surgeon, Massachusetts General Hospital, Instructor in Orthopedic Surgery, Harvard Medical School. His subject is "Progress in Orthopedic Surgery" Page 141 Address 234 Marlborough Street, Boston

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY
Foster S Kellogg M.D. Frederick L Good, M.D.
Chairman Secretary
Frederick J Lynch M.D., Clerk

What Is the Management of a Breech Presentation?

The fact of a breech is in itself presumptive evidence of some variation from the obstetric normal, beyond the abnormal position. Commonly this variation is a small pelvis, a low placenta is not infrequently encountered. A breech discovered, a careful examination should be made to determine the possible presence of some other condition carrying in itself a grave prognosis for child or mother. The higher foetal mortality of breech presentations is due frequently to the accompanying pathology. A breech delivery, properly conducted, in the absence of other pathology, is a relatively easy and safe delivery. It should always be borne in mind that a breech may be the first evidence encountered, of a multiple pregnancy.

The breech cases present an opportunity for nice obstetric judgment which case may be confidently allowed to proceed as a breech delivery, which should be delivered by another method. The relative disproportion cases present the difficult problem. The alternative delivery being a cesarean, the importance of a correct decision is increased.

The attempt before delivery, by external version, to convert a breech into a normal vertex has no practical value. The procedure itself is not difficult but the maintenance of the corrected position is. Its employment ignores fundamental aspects of a breech presentation. An uncomplicated breech will deliver itself with probably not greater difficulty than would a vertex, while the breech, complicated by a small pelvis, or a previa, is obviously not greatly benefited by changing the presentation. A "primiparous breech" is often accepted as one of an increasing number of indications for cesarean. As a generalization this is not good obstetrics. Aside from the breech presentation there should be other indications to warrant delivery by section, a definitely determined disproportion, possibly a previa or a complicating neoplasm, would be definite section indications. The elderly primipara, or a delayed first stage, might represent a type of case with a relative indication for cesarean.

It is of practical importance in the management of breech cases that the family is fully informed of the possibilities and that it shares in the responsibility for border line decisions.

It being decided that a breech presentation may be safely allowed to proceed as such the second aspect of the management of a breech presents itself, the actual conduct of the breech delivery. In such a case the first general rule is to allow the delivery to proceed without interference as long as there is obvious progress. One should not ordinarily attempt extraction as soon as the presenting breech can be grasped, rather labor should be allowed to proceed until a well developed crowning has dilated, in considerable degree, the pelvic floor. With crowning obstetric ether is started for better control. The time when the breech no longer recedes in the interval between contractions is the correct time to begin traction. At this time the obstetric ether should be carried to primary anesthesia, the relaxation thus secured aiding materially in extraction. As traction on the breech is made, the legs should be left extended (to secure a greater dilation of the perineum), the line of traction should be parallel to the long axis of the mother's body, the foetus rotated if necessary, to keep the back anterior, as the shoulder girdle comes to the pelvic floor that shoulder most anterior should be rotated under the arch, traction at this time sharply downward, anterior rotation is sometimes advantageously aided by finger pressure under the shoulder. It is best, if possible, to secure complete delivery of the anterior shoulder by continuing downward traction alone rather than to secure its early delivery by hooking the arm out from under the arch. The anterior arm delivered, the body is rotated slowly in the reverse direction to bring the posterior shoulder anterior, traction sharply downward being continued. Its delivery is most advantageously secured by continued downward traction, this line of traction is necessary to most easily bring the after coming head to the low pelvis. Premature delivery of the shoulders is usually followed by premature upward traction with resultant disturbance of mechanism of the after coming head. The shoulders delivered, the head is transferred to them, the foetal body held at right angles to the long axis of the mother's body. From this point the entire force necessary for continued descent of the head must be furnished by abdominal pressure. Flexion of the head is favored by the gentle traction of a finger in the mouth. If delay is encountered at this point, the perineum should be retracted by a Sims speculum, up to the baby's mouth, permitting inspiration if respiratory attempts begin. Delay at this point is usually the result of an incompletely dilated pelvic floor. The perineum retracted, sufficient time can be taken to complete this dilation without undue injury. For cepts to the after coming head, to complete delivery, should be resorted to rather than undue

traction on the shoulders. As soon as the mouth is over the perineal edge sufficient time may be taken to reduce perineal injury to a minimum.

Questions of a similar nature to the above will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

BOSTON MEDICAL LIBRARY

NOTES ON CURRENT LITERATURE AND RARE BOOKS

The Boston Medical Library receives from the larger Boston hospitals a list of their operative work for each day. It is available here on the Bulletin board in the entrance hall or may be had by calling Kenmore 1617. This information is not available before nine o'clock A. M. of the day on which the operations are scheduled. The hospitals supplying this information are the Boston City Hospital, Massachusetts General and the Peter Bent Brigham. Others may be added later.

During the week of March 12th there will be exhibited in Holmes Hall the significant literature on Rabies for the guidance of those who wish to be informed. It is important that as much enlightened sentiment as possible be brought to bear upon this most important public health question. To assist in the achievement of this end the Library opens its doors to all whether layman or professional who desire to avail themselves of its resources.

In commemoration of the two hundredth anniversary of the birth of John Hunter which should have been celebrated on February 13th those who are interested may find on exhibition the more important editions of his works in Holmes Hall at the Boston Medical Library from March 12th to 17th.

JOHN HUNTER
1728-1793

With two commemorative celebrations last year those of Laennec and Lister and this year of Harvey and Hunter opportunity has been offered to renew our acquaintance with the characters and activities of four of the master minds of medicine. A study of the life of John Hunter is interesting and instructive from several points of view. That there should have come from one family two men of such outstanding prominence in the same field of activity as William and John Hunter is in itself unusual. That in the family background there should have been nothing in its previous record that would predicate such an outcome makes this all the more remarkable for though their forebears were stable Scotch families on both sides distinguished for integrity and honesty there had been no individuals conspicuous in the lines

along which these two men became famous. In fact the earlier years of John Hunter's life offered no hint of the direction in which his tastes would lead and certainly none of any exceptional abilities. He had no liking for books or scholarship in fact ridiculed such interests and dropped his formal education at an early period. As a boy and youth it was out-of-door country sports with a not unusual interest in natural history that seemed to attract him most. About the time he was seventeen he went to Glasgow to live with and work for a relative in the lumber business and for a time was employed as a cabinet maker.

At twenty he joined his brother William in London to help him with his dissections. He was surprisingly clever at dissecting and popular with the 'Resurrection-men'. His brother secured permission for him to 'attend' at the Chelsea Hospital (1749) with William Cheselden and two years later (1751) he became a pupil of Percival Pott at St Bartholomew's. He was chosen one of the masters of anatomy of the Surgeons' corporation. In 1754 he entered as surgeon-pupil at St Georges and for several months in 1756 he was house surgeon. In 1755 he matriculated at St Mary's Hall Oxford but did not complete his course as he had no stomach for the classics. He was assisting his brother with his lectures as early as 1754. He was busy with numerous anatomical investigations on the lymphatic system, the veins, the placental circulation, the descent of the testis in the foetus and the nasal and olfactory nerves.

Because of ill health in 1759 he took an ocean trip as surgeon for a naval expedition where he busied himself with a study of the coagulation of the blood. Later (1762) he gained experience valuable to him as a surgeon in the British army in Portugal. He was also at this time interested in the habits of hibernating animals. He returned to London and set up as a surgeon in 1764, offering classes in anatomy and surgery but his diffidence and bad delivery made him a poor teacher and he never had many pupils. He obtained all the animals that died in menageries etc. to study and fitted up a very complete (for the time) laboratory and museum. Whenever as much as ten guineas accumulated he used a portion of it to purchase animals or specimens. He was indefatigable in the pursuit of his surgical interests. Even a personal experience with a ruptured tendo Achilles in his own leg gave him opportunity to make studies upon the repair of tendons (1767) that led to the development of our present day knowledge on this subject.

In 1766 he made his first venture in print. In 1763 he secured the position of Surgeon to St Georges Hospital which marked a very great increase in the size of his practice and on account of which he moved into larger quarters, vacated by his brother William. He took house pupils here bound to him for five years for five hundred guineas. Among them was Jenner of whom he was very fond. In 1771 he published

part of his work on the human teeth. In this year he was married. In 1722 he presented to the Royal Society, to which he had been elected in 1767 (earlier than his brother William), a memorable paper on "The digestion in the stomach after death." He kept adding more and more to his museum and it had cost him at the time he ceased collecting 10,000 pounds. During the last fifteen years of his life he was subject to anginal attacks though he never suffered these to interrupt his work for any length of time and when they were over he went back to his customary activities with his usual vigor.

As one reviews John Hunter's life in perspective there are several thoughts that are aroused by it. In the first place it is apparent that a formal schooling is not an essential to success in even so strictly a professional field as medicine. Honesty of purpose, determination to succeed and willingness to work will accomplish great things. Had this been accompanied in Hunter's case by a liberal, cultured training how much more he might have accomplished is merely conjecture. His deficiencies in this respect doubtless account for most of the unlovely features of his character, and he had such. He was diffident and lacked the faculty of being pleasing in his address, he was careless in his attire, rather rough and abrupt in his speech, intolerant and not a particularly easy person to get along with, as is evidenced by the frequent embroilments in which he was mixed up with the Hospital staff and more unfortunately with his older brother, William, from whom he was estranged for many years before his death. He allowed his interest in natural history to keep him poor all his life as he was a prodigal spender on the upkeep of his museum and his biological laboratory. To such an extent did he indulge himself in this way that he had barely enough to pay his debts when he died and had it not been for grants from the Government and the purchase by vote of Parliament of his Museum for something like 15,000 pounds his widow would have had no income to live upon, and as it was she was obliged to pursue a very different plan of life from what she had been accustomed to either during her husband's life or before her marriage. The bickering and quarreling in which he was so frequently engaged with regard to priority of discovery or other matters of no greater significance seem to us of today to cast a sinister shadow across a path which in other respects was so brightly illumined. We must remember however that that was the fashion of the day.

His interest in anatomy was not in its descriptive feature and the vast amount of dissection he did, both human and upon every available variety of animal, built up his vast knowledge of anatomic and physiologic function. Over 13,000 specimens were duly catalogued and described but this was only a small amount of the work of this sort that he did. His sleep re-

quirements were only four to five hours and the rest of the twenty-four he was busy with his dissections, classifications, descriptions, collections and such time as he was obliged to spend in taking care of his surgical practice. Up to the time of the death of Percival Pott his practice had not been large but upon his passing, Hunter became the chief surgeon of London and his practice correspondingly increased.

His publications, put out at last through his own printing establishment, were but a small part of the vast amount of material which he had in manuscript form, the bulk of which was burned. His connection with the medical teaching at St. George's Hospital was perhaps the most fruitful source for those embittered conflicts with confrères that seemed so beneath the dignity of a man of his capacity, but probably should be looked upon charitably. It was in consequence of one of these conflicts at a Board meeting of the Hospital at which he was in attendance that anger provoked an anginal attack from which he immediately died. This occurred on October 16, 1793, as Cliff points out, the very day and hour in which Marie Antoinette was being beheaded in Paris. The rule of his life as he somewhere expressed it could very well serve as a guide to any student of science.

"Don't think, try, be patient, be accurate."

MISCELLANY

APPOINTMENTS AT PONDVILLE HOSPITAL

Dr. Grantley W. Taylor has been selected as Visiting Surgeon on the Visiting Staff, which is headed by Dr. Ernest M. Daland. Dr. Taylor is now affiliated with the Massachusetts General Hospital, the Collis P. Huntington Memorial Hospital and the Good Samaritan Hospital.

Dr. James I. Knott has been recently appointed resident physician at the Hospital. Dr. Knott comes from St. Louis, where he has been doing work in the Barnard Free Skin and Cancer Hospital. He comes to Massachusetts to enlarge his experience with cancer work. Dr. Knott is a graduate of the Washington University School of Medicine at St. Louis in 1925 and has done postgraduate work at the Washington University. In addition he has served at the Jewish Hospital in St. Louis and at the Strong Memorial Hospital in Rochester, New York.

These appointments will strengthen the clinic service given every Thursday afternoon at the Hospital. Physicians may bring in their patients or send them with a letter in which case the findings are reported by mail. The telephone number of the Hospital is Walpole 386.

PASTEUR AND RABIES

Before the days of Pasteur the bite of a mad dog meant probable death.

In 1835, while experiments on rabies were still in an early stage, a little Alsatian boy Joseph Meister was brought into Pasteur's laboratory.

This child had been attacked by a rabid dog and the wounds on his legs, thighs and hands had been cauterized—not at once by a red hot iron, but by carbolic acid twelve hours afterwards.

Pasteur hesitated to apply a treatment which was not yet fully established by experiments. Persuaded finally he performed a series of inoculations over

a period of ten days. Each time he injected a substance more virulent than the last and in this way built up an immunity to the disease. The material contained in the last injection when tested on a rabbit that was not protected by antirabic inoculation was strong enough to cause hydrophobia after only seven days incubation. Its injection was a sure test of the immunity established by the treatment. The little boy's life was saved.

Since then Pasteur treatments have been given successfully to thousands of people. The value of the treatments depends to some extent upon a prompt diagnosis of the disease. We must therefore continue to work toward the elimination of rabies in the dogs themselves.

Antirabic vaccines for the protection of dogs have been developed but so far the immunity they confer is of relatively short duration. Experiments on animals now going on in scientific laboratories encourage us to hope that eventually there will be prepared a vaccine that can effectively protect them against rabies.

IF YOU ARE BITTEN BY A DOG

- 1) Report at once to the Health Department

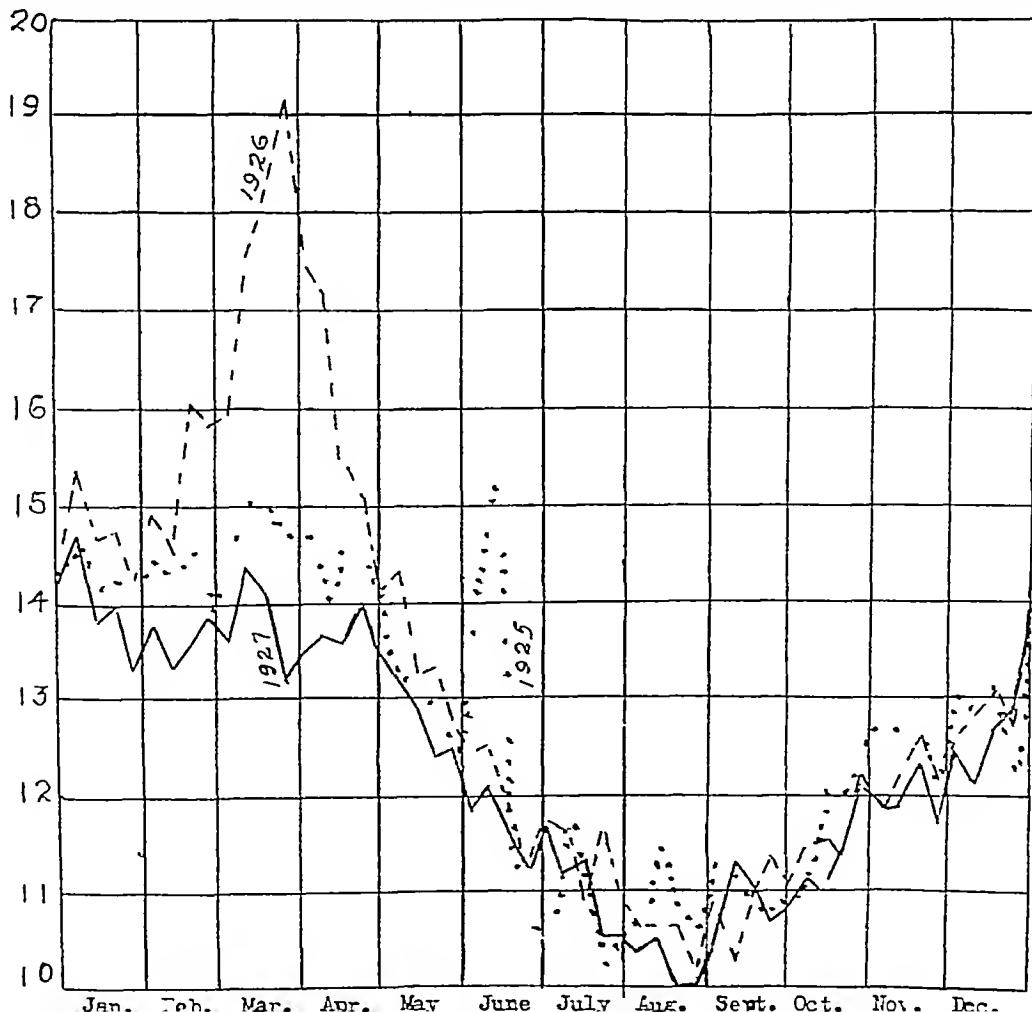
- 2) Do not kill the dog unless this is necessary. Lock him up and examine him daily for symptoms of rabies.
- 3) If the dog that has bitten you cannot be found, and the circumstances of the biting warrant the assumption that the dog was probably rabid, apply to your physician or the Board of Health for the Pasteur treatment.
- 4) If the dog remains well for a period of ten days after the bite, you do not need the Pasteur treatment.
- 5) If the dog develops rabies, begin treatment at once. It takes a number of days.

Report stray dogs to the city. Antirabic vaccination for dogs is not yet a sure preventive. Pending further experiment the only safe measures for controlling the disease are universal muzzling of dogs at large or else their prompt removal. See that your dog pound has funds sufficient for its work.

The above is a copy of the leaflet prepared and distributed by the American Association for Medical Progress, Inc., 370 Seventh Avenue, N. Y. They may be obtained in quantity from the Association.

WEEKLY HEALTH INDEX

The Department of Commerce, Washington, has published a chart of the weekly health index setting forth the mortality rates of cities reporting 1925, 1926 and 1927. This is quite interesting in that the chart shows an encouraging condition of things in 1927 as compared with the two preceding years.



part of his work on the human teeth. In this year he was married. In 1722 he presented to the Royal Society, to which he had been elected in 1767 (earlier than his brother William), a memorable paper on "The digestion in the stomach after death." He kept adding more and more to his museum and it had cost him at the time he ceased collecting 10,000 pounds. During the last fifteen years of his life he was subject to anginal attacks though he never suffered these to interrupt his work for any length of time and when they were over he went back to his customary activities with his usual vigor.

As one reviews John Hunter's life in perspective there are several thoughts that are aroused by it. In the first place it is apparent that a formal schooling is not an essential to success in even so strictly a professional field as medicine. Honesty of purpose, determination to succeed and willingness to work will accomplish great things. Had this been accompanied in Hunter's case by a liberal, cultured training how much more he might have accomplished is merely conjecture. His deficiencies in this respect doubtless account for most of the unlovely features of his character, and he had such. He was diffident and lacked the faculty of being pleasing in his address, he was careless in his attire, rather rough and abrupt in his speech, intolerant and not a particularly easy person to get along with, as is evidenced by the frequent embroilments in which he was mixed up with the Hospital staff and more unfortunately with his older brother, William, from whom he was estranged for many years before his death. He allowed his interest in natural history to keep him poor all his life as he was a prodigal spender on the upkeep of his museum and his biological laboratory. To such an extent did he indulge himself in this way that he had barely enough to pay his debts when he died and had it not been for grants from the Government and the purchase by vote of Parliament of his Museum for something like 15,000 pounds his widow would have had no income to live upon, and as it was she was obliged to pursue a very different plan of life from what she had been accustomed to either during her husband's life or before her marriage. The bickering and quarreling in which he was so frequently engaged with regard to priority of discovery or other matters of no greater significance seem to us of today to cast a sinister shadow across a path which in other respects was so brightly illumined. We must remember however that that was the fashion of the day.

His interest in anatomy was not in its descriptive feature and the vast amount of dissection he did, both human and upon every available variety of animal, built up his vast knowledge of anatomic and physiologic function. Over 13,000 specimens were duly catalogued and described but this was only a small amount of the work of this sort that he did. His sleep re-

quirements were only four to five hours and the rest of the twenty-four he was busy with his dissections, classifications, descriptions, collections and such time as he was obliged to spend in taking care of his surgical practice. Up to the time of the death of Percival Pott his practice had not been large but upon his passing, Hunter became the chief surgeon of London and his practice correspondingly increased.

His publications, put out at last through his own printing establishment, were but a small part of the vast amount of material which he had in manuscript form, the bulk of which was burned. His connection with the medical teaching at St. George's Hospital was perhaps the most fruitful source for those embittered conflicts with confreres that seemed so beneath the dignity of a man of his capacity, but probably should be looked upon charitably. It was in consequence of one of these conflicts at a Board meeting of the Hospital at which he was in attendance that anger provoked an anginal attack from which he immediately died. This occurred on October 16, 1793, as Cliff points out, the very day and hour in which Marie Antoinette was being beheaded in Paris. The rule of his life as he somewhere expressed it could very well serve as a guide to any student of science.

"Don't think, try, be patient, be accurate."

MISCELLANY

APPOINTMENTS AT PONDVILLE HOSPITAL

Dr. Grantley W. Taylor has been selected as Visiting Surgeon on the Visiting Staff, which is headed by Dr. Ernest M. Daland. Dr. Taylor is now affiliated with the Massachusetts General Hospital, the Collis P. Huntington Memorial Hospital and the Good Samaritan Hospital.

Dr. James I. Knott has been recently appointed resident physician at the Hospital. Dr. Knott comes from St. Louis, where he has been doing work in the Barnard Free Skin and Cancer Hospital. He comes to Massachusetts to enlarge his experience with cancer work. Dr. Knott is a graduate of the Washington University School of Medicine at St. Louis in 1925, and has done post graduate work at the Washington University. In addition, he has served at the Jewish Hospital in St. Louis and at the Strong Memorial Hospital in Rochester, New York.

These appointments will strengthen the clinic service given every Thursday afternoon at the Hospital. Physicians may bring in their patients or send them with a letter in which case the findings are reported by mail. The telephone number of the Hospital is Walpole 386.

PASTEUR AND RABIES

Before the days of Pasteur the bite of a mad dog meant probable death.

In 1885, while experiments on rabies were still in an early stage a little Alsatian boy Joseph Meister, was brought into Pasteur's laboratory.

This child had been attacked by a rabid dog and the wounds on his legs, thighs and hands had been cauterized—not at once by a red hot iron but by carbolic acid twelve hours afterwards.

Pasteur hesitated to apply a treatment which was not yet fully established by experiments. Persuaded finally he performed a series of inoculations over

a period of ten days Each time he injected a substance more virulent than the last and in this way built up an immunity to the disease The material contained in the last injection when tested on a rabbit that was not protected by antirabic inoculation was strong enough to cause hydrophobia after only seven days incubation Its injection was a sure test of the immunity established by the treatment The little boy's life was saved

Since then Pasteur treatments have been given successfully to thousands of people The value of the treatments depends to some extent upon a prompt diagnosis of the disease We must therefore continue to work toward the elimination of rabies in the dogs themselves

Antirabic vaccines for the protection of dogs have been developed, but so far the immunity they confer is of relatively short duration Experiments on animals now going on in scientific laboratories encourage us to hope that eventually there will be prepared a vaccine that can effectively protect them against rabies

IF YOU ARE BITTEN BY A DOG

- 1) Report at once to the Health Department

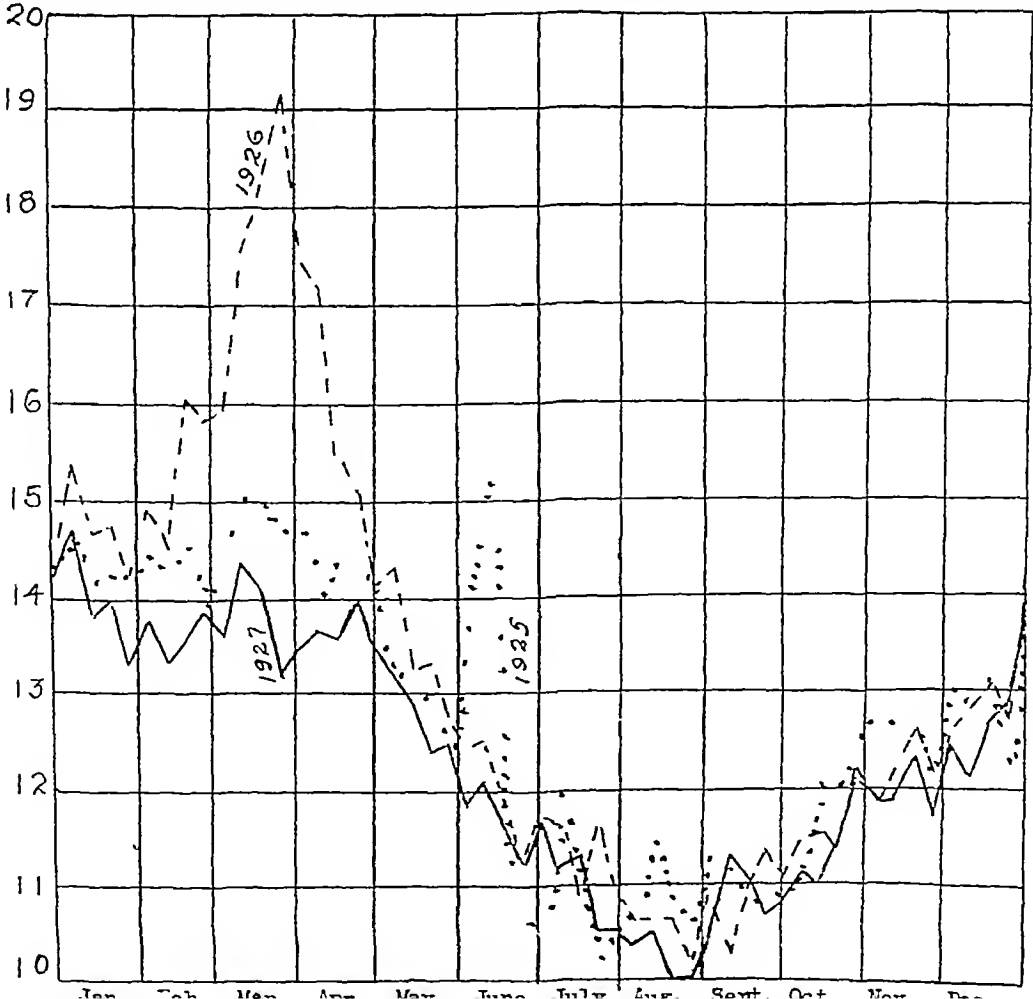
- 2) Do not kill the dog unless this is necessary Lock him up and examine him daily for symptoms of rabies
- 3) If the dog that has bitten you cannot be found, and the circumstances of the biting warrant the assumption that the dog was probably rabid apply to your physician or the Board of Health for the Pasteur treatment.
- 4) If the dog remains well for a period of ten days after the bite, you do not need the Pasteur treatment
- 5) If the dog develops rabies begin treatment at once It takes a number of days

Report stray dogs to the city Antirabic vaccination for dogs is not yet a sure preventive Pending further experiment the only safe measures for controlling the disease are universal muzzling of dogs at large or else their prompt removal See that your dog pound has funds sufficient for its work.

The above is a copy of the leaflet prepared and distributed by the American Association for Medical Progress Inc 370 Seventh Avenue N Y They may be obtained in quantity from the Association.

WEEKLY HEALTH INDEX

The Department of Commerce Washington has published a chart of the weekly health index setting forth the mortality rates of cities reporting 1925, 1926, and 1927 This is quite interesting in that the chart shows an encouraging condition of things in 1927 as compared with the two preceding years



FIRST UNIT OF NEW YORK MEDICAL CENTER TO BE OPENED

A few days after the official opening day, on March 16, 1928, when the new Presbyterian Hospital building at the Medical Center in New York, will be open for inspection by the Medical Authorities, the Presbyterian Hospital of New York will admit patients to wards and private rooms, and out patients to the Vanderbilt Clinic. This building, the tallest hospital structure in the world, in which are housed the Presbyterian Hospital, the Sloane Hospital for Women and Squier Urological Clinic has an ultimate bed capacity of 1,177.

A few days before this date Anna C Maxwell Hall, the residence of the Presbyterian Hospital Training School pupils, will be first occupied by the incoming class of about 50 students. This is a fifteen story H shaped structure having living quarters for 360 pupil nurses, an individual room with running water for each pupil nurse, a large swimming pool and recreation hall are features of the residence.

NOTES ON CHILD WELFARE TOPICS

The Unmarried Mother The psychologist of the Minnesota State Board of Control reports that in a group of nearly 350 unmarried mothers whose children were born in Twin Cities hospitals during a recent year there was over four times as large a proportion of feeble minded as among a group of some 7,000 school children. She estimates that about 2,000 children born out of wedlock were being supported by the State at an annual expense of approximately half a million dollars. The early detection and care of the feeble minded, more visiting teachers and social workers, and more club and neighborhood houses are suggested by her as preventive measures.

Healthy Children Have the Best Hearing In a recent text of the hearing of four groups of children by a physician of Boston, a group of boys in a school which maintained high physical and nutritional standards proved to have the best hearing. The children in an institute for the blind made the next best average, and a group of children from the Boston public schools followed them closely. The poorest average was made by a group of crippled and deformed children in a State institution.

Compiled by U S Children's Bureau

CLINICAL TOUR OF EUROPE

The American College of Physical Therapy is sponsoring a tour of Europe starting from New York on May 26. In London St. Bartholomew's Hospital, the Middlesex Hospital, the London General Hospital and the Lord Trelor Hospital will be visited. The party will also visit Paris, Switzerland, Austria, Germany and Denmark where the clinical visit will end.

Any doctor who is interested in Physical Therapy is cordially invited to attend these clinics. Headquarters for the tour have been established at 25 Broadway Suite 656 New York, where further particulars may be obtained.

CHILD HEALTH WORK IN CONNECTICUT

A well child conference was opened in the Town Hall of Winsted, Connecticut, January 31 under the auspices of the Public Health Nursing Association, with the support of the health officers and doctors of the city and with the cooperation of the State Department of Health. The conference will be held hereafter the third Wednesday of each month. On Saturday February 11 a similar conference was opened at Guilford.

RECENT DEATH

MacKNIGHT—DR. ADAM STEPHENSON MacKNIGHT, Superintendent of the Bristol County Tuberculosis Hospital at Attleborough since 1918, died at his home in that city February 27, 1928, aged 69.

Dr. MacKnight was born in Philadelphia, October 23 1858, took his M.D. at Jefferson Medical College in 1888 and practised in his native city and in New York until 1895, when he became medical examiner of Newport County, Rhode Island. Three years later he settled in Fall River and joined the Massachusetts Medical Society. He was district health officer for the Fall River District when he was placed in charge of the Bristol County hospital. In 1926 he was elected chairman of the Section of Tuberculosis of the Massachusetts Medical Society. He was a Fellow of the American Medical Association.

OBITUARY

WILLIAM RICHARDSON WOODBURY, M.D.
1863—1927

Dr. William Richardson Woodbury of Rochester, N. Y., who recently died in that city, was for many years, a practitioner in Boston and a physician to the Boston Dispensary. He was born in Boston, September 17, 1863, the son of Mary Richardson and Isaac D. Woodbury. His ancestors were old New England stock. Dr. Woodbury was graduated from Tufts College in 1885 with Phi Beta Kappa rank and from the Harvard Medical School in 1889 and later passed two years in Berlin and Vienna. About 1892 he began the practice of neurology in Boston and continued until 1916 when he moved to Rochester, N. Y., where he married Mary Pease Milliman, who survives him. During most of this period, also, he was in charge of the neurological clinic at the Boston Dispensary.

After his removal to Rochester he continued his practice and also served as neurologist to the Genesee Hospital of that city. During the war he was commissioned as a captain in the medical corps and was stationed at the St. Elizabeth's Hospital, Washington, D. C., and at Camp Shelby, Miss. He was a member of the Massachusetts and the New York Medical Societies, the American Medical Association, the Rochester Academy of Medicine, the American Academy of Dental Science, the Harvard Club of Boston, the Rochester Harvard Club and the University Club of Rochester, N. Y.

Dr. Woodbury was a man of culture and learning. His quiet and rather retiring disposition kept him from being a very prominent figure in Boston for he seldom spoke in medical meetings, nor did he add to the medical literature of his day. During the latter years of his life he became interested in the Freudian theory of psychoanalysis which he modified in accordance with his own best judgment. He was particularly successful with his patients in Rochester and his practice there was large. He found time however to serve in public hospitals and was responsible in Rochester for the establishment of the Dental Clinic thus continuing his interests in the relation of dentistry to medicine a subject which had been prominent in his mind since the beginning of his practice. While in Boston he had been associated with dental research at the Harvard Dental School. Another connection with Boston was not lost sight of during his ten years at Rochester, the Boston Medical Library. He was a devoted friend of the Library and for many years he was a constant visitor. After his removal to Rochester he continued his interest by occasional visits to the Director and by correspondence.

Dr. Woodbury a gracious and cultured gentleman died at the Rochester General Hospital, after a brief illness, September 29 1927.

CORRESPONDENCE

NOTES ON NATIONAL AFFAIRS

By Our Regular Correspondent

THE HEALING ART IN THE DISTRICT OF COLUMBIA

The District of Columbia for which the Congress of the United States acts, or is supposed to act as local legislature is now much favored with measures proposing or purporting to regulate various branches of the healing art. Thus there are bills before Congress to regulate osteopathy, chiropractic and naturopathy in the nation's capital where none of these cults are now subject to any special supervision.

These bills are all objectionable to the medical profession. In the case of the osteopaths whose standards are stated to include a high school education, two years pre-medical work and four years in an osteopathic college the licensed practitioners would be given all of the privileges of regular physicians including the right to use narcotics, sign death certificates and practice in public institutions. The chiropractors after a high school education and eighteen months of instruction in the tenets of their cult would be permitted to take an examination to practice or, if they had already been practicing would be licensed without an examination.

A most comprehensive bill to regulate the healing art generally and to protect public health in the District of Columbia was introduced in the House on February 10 1928 by Representative Bowman of West Virginia. This particular measure H.R. 10798 is nearly 50 pages in length and because it embodies many sensible propositions merits the attention of the medical profession throughout the country. Legislation adopted by Congress for the City of Washington is sometimes looked upon as in the nature of model legislation, though actually it is sometimes anything but that.

The Bowman bill applies to every branch of the healing art, except dentistry, podiatry, optometry, pharmacy and nursing which are already regulated by law in the District of Columbia. It provides that no person shall practice the healing art in the District unless licensed to do so and defines broadly the terms 'practice' and 'healing art'. A commission on licensure would be created consisting of the President of the Board of Commissioners (who at present happens to be an engineer and graduate of the Massachusetts Institute of Technology), the U. S. Commissioner of Education, the U. S. District Attorney, the superintendent of schools and the health officer of the District of Columbia.

This commission would establish minimum standards of pre-professional and professional education in the healing art and could also rate schools and hospitals as to standards of education in these subjects. All applicants to practice would come before this commission which would determine their general qualifications and then refer them to an appropriate examining board of from three to five members. The commission would appoint the following boards: (a) basic sciences (b) medicine and osteopathy (c) midwifery and (d) drugless healing. In the last category there might be several boards.

The board of examiners in basic sciences would examine every applicant, except those entitled to practice by virtue of a previous license to practice medicine and surgery in the District of Columbia or those entitled to licenses by virtue of years of practice of osteopathy or some form of drugless healing. The board would examine applicants in the sciences of anatomy, physiology, chemistry, bacteriology and pathology. No member of this board could teach or practice while serving.

The board of examiners in medicine and osteopathy would consist of four practitioners of medicine and

surgery, one of whom shall be an adherent of the homeopathic school and one an osteopath. On petition of five or more adherents of any drugless method of healing who have practiced for at least five years the commission may appoint an examining board for the cult in question. After passing the basic science examination applicants would be referred to the suitable board. The commission would prescribe by rule the nature and extent of the various examinations given by the various boards, all such tests to be in writing supplemented by laboratory and clinical tests if practicable and if deemed proper by oral examinations. The commission would also have the power to abolish such boards if the public interest no longer requires them.

The examinations of the respective boards would be conducted twice a year in January and July, except that the basic science board would be held whenever the commission ordered. All questions proposed would be submitted in advance to the commission by the various boards and the commission would be empowered to select questions relating to the diagnosis and prevention of communicable diseases and give them to all applicants. All reports and answers would be open to public inspection.

Fees for licenses are set as \$25 for license on the basis of an examination, \$50 for a license by reciprocity, and \$1 for a license on the basis of an existing license or by virtue of years of practice. Persons already licensed to practice medicine and surgery or midwifery, would have to be relicensed under the terms of the act but no such licenses would be issued after five years from the date of approval of the law.

Any osteopath who had practiced for ten years prior to the passage of the act or who had previously obtained a diploma from a college recognized by the American Osteopathic Association would be entitled to a license without examination. Any drugless healer who had practiced for three years and had graduated with a degree could also apply for license without examination. The licenses in these cases would be only for the practice of the particular branch of the healing art and not medicine generally.

In the case of licenses by reciprocity regular physicians must have had at least two years of pre-medical college work, four years medical school and one year in a hospital, whereas osteopathic and drugless healers graduating prior to December 31 1930 would be required to have only a high school education. After that date two years pre-medical work, four full years of professional instruction and one year of hospital training would be required of applicants of these schools of healing.

The bill closes with an enumeration of offenses for which licenses might be revoked. It likewise exempts medical officers of the Federal Government from its provisions and also duly licensed practitioners of nearby States called to attend patients in the District of Columbia.

This measure has been outlined in some detail because of its great interest and importance to the medical profession. Residents of the District of Columbia are bereft of the privilege and duty of voting and so must depend upon their well-wishers in the States to influence their own particular representatives in Congress to vote favorably or otherwise on matters pertaining to the City of Washington.

ON THE NURSING PROBLEM

February 27 1928

NEW ENGLAND JOURNAL OF MEDICINE.

Mr Editor

I have been watching all types of periodicals for material on nursing and of course have paid particular attention to the medical journals. It was therefore with much interest that I came upon the article

in your issue of January 19, in which you discussed so fearlessly "The Crisis in Boston's Traditions of Nursing" Your thoughtful analysis of the economic factors in the situation I should suppose would have great weight with the proper authorities. It must, of course, be gratifying to the nurses to know that you are so ready to take up the cudgels in a matter which is obviously of vital importance to them.

Our study of the whole nursing situation has led us rather widely afield, and I think all the members of the Committee are particularly impressed with the fact that as a profession nursing is on a most insecure economic basis. The more thoughtful element in the profession is already working towards some sort of a reorganization and a solution for the existing serious problems. I should think that they would find great encouragement when the medical profession, through its official organs, is willing so frankly to stand behind the demand for thoroughly competent women at the head of important nursing services.

Sincerely yours,

MAX ATRES BURGESS, *Director*,
Committee on the Grading of Nursing Schools

RESPONSE TO APPEAL FOR ASSISTANCE

The American Red Cross
Boston Metropolitan Chapter

March 2 1928

To the Editor of THE NEW ENGLAND JOURNAL OF
MEDICINE

Thank you for putting into the JOURNAL the statement about the doctor in Greenville, Mississippi who lost his library and instruments in a fire recently.

You will be glad to know that to date we have received gifts as follows: From Dr Charles C Foster, Cambridge, a microscope; from Dr W B Banerman, East Bridgewater, Tice's "Practice of Medicine".

Gifts of the other items on the list published in the February 23 issue of the JOURNAL, page 56, will be appreciated and duly acknowledged by the Boston Metropolitan Chapter.

Sincerely yours

ROY M CUSHMAN, *Director*

DESCARTES ON ANIMAL SPIRITS IN THE VENTRICLES OF THE BRAIN

Mr Editor

The following is from "The Survival of Mediaeval Intellectual Interests into Early Modern Times" by Lynn Thorndike, published in "Speculum" for April, 1927.

The author tells us the Descartes was concerned with many of the problems and speculations, "which had occupied the attention of the science and philosophy of previous centuries." He repeats the old notion of the formation of animal spirits in the cavities of the brain. Indeed it was not overturned until the time of Gall in the nineteenth century. Descartes doctrine of the pineal gland in the brain as the connecting link between soul and body reminds one of the explanation of thought as the opening and closing of a particle of the substance of the brain similar to a worm, which we find in the ninth century Arabic treatise of Costa ben Luca, "On the Difference between Soul and Spirit."

Costa ben Luca represented this particle as forming a sort of valve between the anterior and posterior ventricles, and held that when a man was in the act of recalling something to mind, this valve opened and the subtle spirits passed from the anterior to the posterior cavity.

Now hear Descartes explanation: "Thus when the soul desires to recollect something, this desire

causes the gland by inclining successively to different sides to thrust the spirits towards different parts of the brain until they come across that part where the traces left there by the object which we wish to recollect are found."

Thorndike concludes: "Finally before taking leave of Descartes, let us recall that even his claim to be the inventor of analytical geometry must be discounted, since Nicholas Oresme had already made use of coördinates in the fourteenth century. Oresme had also employed fractional exponents for powers, an innovation formerly attributed to the sixteenth century mathematicians, Vieta and Stevin."

Very truly yours,

WM PEARCE COUES, M.D.

February 17th, 1928

THE APPOINTMENT OF DR PAUL WAKEFIELD

NEW ENGLAND JOURNAL OF MEDICINE.

Mr Editor

May I announce through your columns the appointment of Dr Paul Wakefield as Supervisor of Tuberculosis Clinics at present being held in the schools throughout the State. As you know, this is a part of the so-called Ten Year Tuberculosis Program instituted by the Department some three years ago of which Dr Henry D Chadwick is the presiding genius. Previously Dr George M Sullivan was in charge but he has left to become State District Health Officer in the Northeastern District.

Dr Wakefield received his A.B. in 1900 from Hiram College, his A.M. in 1907 from Bethany College and his medical degree from Rush Medical College in 1904. From 1905 to 1917 he did hospital work in China with the United Christian Mission Board. In 1917 he was in this country as a Fellow of the Rockefeller Foundation and studied at Harvard, doing also work with Dr Place at the South Department and at our State Sanatorium at Westfield under Dr Chadwick. From 1918 to 1927 he was in charge of student health in the Central China University at Wuchang under the American Episcopal Board. In 1923-24 he was in this country surveying student health activities in colleges and universities in the eastern and central parts of the United States. Through his long experience with student health he has developed the public health point of view and after many months of fruitless search for a competent successor to Dr Sullivan we feel very fortunate in obtaining the services of a man of his calibre, because, after all this extensive program which is being watched by the entire country as the most ambitious attack against tuberculosis ever staged by an official agency, can be no better than the quality of the work given in the clinics under Dr Wakefield's direct supervision.

Yours truly

GEORGE H BIOLOW, M.D.
Commissioner of Public Health

ARTICLES ACCEPTED BY THE A M A COUNCIL ON PHARMACY AND CHEMISTRY

Dear Doctor

In addition to the articles enumerated in our letter of January 28th, the following have been accepted:

Hollister Stier Laboratories

Alder Pollen Extract Hollister Stier Aspen Pollen Extract Hollister Stier Atriplex Pollen Extract Hollister Stier Awnless Brome Grass Pollen Extract Hollister Stier Blue Bunch Grass Pollen Extract Hollister Stier Box Elder Pollen Extract Hollister Stier Canada Blue Grass Pollen Extract Hollister Stier Cheat Pollen Extract Hollister Stier Common Sagebrush Pollen Extract Hollister Stier

len Extract Hollister Stier, Crested Koeleria Pol
len Extract Hollister Stier Dandelion Pollen
Extract Hollister Stier Eastern Ragweed Pollen
Extract Hollister Stier English Plantain Pol
len Extract Hollister Stier Giant Poverty Weed
Pollen Extract Hollister Stier Kentucky Blue
Grass Pollen Extract Hollister Stier Lamb's
Quarters Pollen Extract Hollister Stier Mug
wort Pollen Extract Hollister Stier Orchard
Grass Pollen Extract Hollister Stier Perennial
Rye Grass Pollen Extract Hollister Stier Quack
Grass Pollen Extract Hollister Stier Red Top
Pollen Extract Hollister Stier Redroot Pigweed
Pollen Extract Hollister Stier Russian Thistle
Pollen Extract Hollister Stier Sandberg's June
Grass Pollen Extract Hollister Stier Sheep Sor
rel Pollen Extract Hollister Stier Spring Birch
Pollen Extract Hollister Stier Timothy Pollen
Extract Hollister Stier Velvet Grass Pollen Ex
tract Hollister Stier Western Ragweed Pollen
Extract Hollister Stier Willow Pollen Extract
Hollister Stier

Maltbie Chemical Co

Compound Syrup of Calceose

Yours truly,

W A PUCKNER, Secretary

NEWS ITEMS

HARVARD MEDICAL SCHOOL—Professor George Barger, M.A. D.Sc., F.R.S. Professor of Chemistry University of Edinburgh will speak at 5 P M Friday, March 9, 1928 in Amphitheatre C, Harvard Medical School, on Thyroxin and the Thyroid Gland

APPOINTMENT—Dr W G Watt has been appointed Assistant Dermatologist to the Holvoke Hospital. He also announces the removal of his office from 340 Main Street to 131 Chestnut Street, Holvoke

\$128 000 GIFT TO FOUND A CHAIR OF PATHOLOGY—The Alumni of the College of Physicians and Surgeons of Columbia University have given \$128 000 to the University to found a professorship in pathology in the Medical School

The money will be held in trust until it reaches the sum of \$200 000. The professorship will be known as the Francis Delafield Professorship in honor of the founder of the Pathology Laboratory in the College of Physicians and Surgeons

NERVES IN CANCERS—The discovery of nerves in cancers has been announced according to a contribution in the *Canadian Medical Association Journal* by Dr Horst Oertel

Dr Oertel is Professor of Pathology and Director of the McGill Pathological Institute

Although it is claimed that this alleged demonstration will be a forward step in the knowledge of cancer there is a definite skepticism on the part of some that this discovery even if confirmed may lead to any change in the treatment of malignant growths

Two technicians in the Pathological Institute John Partridge and Brian Thomlinson have contributed zeal and devotion to the alleged demonstration

IGNORANCE SPREADS VACCINATION RUMORS

—A rumor recently became current in Middletown to the effect that a certain woman had such a violent reaction from vaccination that she had gone to the hospital and expected to have her arm amputated. When friends of this woman heard the rumor and called up members of her family to ascertain the facts in the case they were told that the woman had no trouble with her vaccination and that her vaccination was almost healed but she had gone to the hospital for another condition from which she had

suffered for a long time and that was not affected in any way by vaccination. Thus another rumor concerning the ill effects of vaccination was found to have been spread through ignorance.—*Connecticut State Department of Health*

CANCER STILL AN UNSOLVED PROBLEM—

Last year in Connecticut there were 1683 deaths from cancer with a death rate of 106.1. In 1926 the death rate was 106.7. In 1925 107.2. The death rates during the last 20 years show that cancer unlike other diseases for which control measures are in practice have risen steadily. This is shown in five-year periods given below

1920	99.8*	1910	80.2	1900	66.9
1915	90.5	1905	75.5	1925	107.2

*Per 100 000 population

According to statisticians 103,000 people die of cancer in the United States each year. At this rate cancer takes a higher toll than all the infectious diseases except tuberculosis.—*Connecticut State Department of Health*

NEWS ITEMS RELATING TO TUBERCULOSIS ACTIVITIES

NEWTON PUBLIC HEALTH COMMITTEE CONSIDERS ITS PROGRAM

The Public Health Committee of the Newton Welfare Bureau met on February 15th with Dr Sumner H Remick, Director of the Division of Tuberculosis State Department of Public Health and Frank Kiernan, Executive Secretary of the Massachusetts Tuberculosis League to consider a program of work for the year 1928-1929.

Mr Arthur Kendrick of the Board of Health of Newton is Chairman of the Committee. Dr Francis G Curtis, Health Officer of Newton, and Miss Mabel Bragg, Assistant Superintendent of Schools are members of the Committee.

The Christmas Seal Sale of 1927 was the most successful one ever held in Newton and the Committee considered various suggested plans for tuberculosis prevention work in Newton during the coming year.

CAMBRIDGE ANTI TUBERCULOSIS ASSOCIATION REVIEWS ITS WORK

A special meeting of the Board of Managers of the Cambridge Anti Tuberculosis Association of which Mrs Mabel Greeler Smith is Executive Secretary was held on March 16th at the Association's headquarters Central Square Cambridge.

Dr Henry D Chadwick, Superintendent of Westfield State Sanatorium, Dr Sumner H Remick, Director Division of Tuberculosis State Department of Health and Frank Kiernan, Executive Secretary of the Massachusetts Tuberculosis League were in invited guests to confer with the Managers on the Association's program of tuberculosis prevention with children.

Dr Hilbert F Davy, President of the Association was in the chair. Fifteen members of the Board of Managers were present. Plans were discussed for further cooperation with the Cambridge Board of Health in connection with the follow up of children examined in the State's Ten Year Clinics.

The Managers voted to continue in 1928 the summer health camp work of the Association.

It was also agreed that the policy of the Association in sending children to Sharon Sanatorium should be continued.

Drs Remick and Chadwick spoke on the progress of the State Ten Year Program for children.

Dr Merrill E Champion told of the Child Hygiene Program of the State Department and its relation to other child health work.

in your issue of January 19, in which you discussed so fearlessly "The Crisis in Boston's Traditions of Nursing" Your thoughtful analysis of the economic factors in the situation I should suppose would have great weight with the proper authorities. It must, of course, be gratifying to the nurses to know that you are so ready to take up the cudgels in a matter which is obviously of vital importance to them.

Our study of the whole nursing situation has led us rather widely afield, and I think all the members of the Committee are particularly impressed with the fact that as a profession nursing is on a most insecure economic basis. The more thoughtful element in the profession is already working towards some sort of a reorganization and a solution for the existing serious problems. I should think that they would find great encouragement when the medical profession, through its official organs, is willing so frankly to stand behind the demand for thoroughly competent women at the head of important nursing services.

Sincerely yours,

MAY AYRES BURGESS, *Director,*
Committee on the Grading of Nursing Schools

RESPONSE TO APPEAL FOR ASSISTANCE

The American Red Cross
Boston Metropolitan Chapter

March 2, 1928

To the Editor of THE NEW ENGLAND JOURNAL OF
MEDICINE

Thank you for putting into the JOURNAL the statement about the doctor in Greenville, Mississippi, who lost his library and instruments in a fire recently.

You will be glad to know that to date we have received gifts as follows: From Dr. Charles C. Foster, Cambridge, a microscope; from Dr. W. B. Banerman, East Bridgewater, Tices "Practice of Medicine".

Gifts of the other items on the list published in the February 23 issue of the JOURNAL, page 56, will be appreciated and duly acknowledged by the Boston Metropolitan Chapter.

Sincerely yours

ROY M. CUSHMAN, *Director*

DESCARTES ON ANIMAL SPIRITS IN THE VENTRICLES OF THE BRAIN

Mr Editor

The following is from 'The Survival of Mediaeval Intellectual Interests into Early Modern Times' by Lynn Thorndike, published in Speculum for April, 1927.

The author tells us the Descartes was concerned with many of the problems and speculations "which had occupied the attention of the science and philosophy of previous centuries." He repeats the old notion of the formation of animal spirits in the cavities of the brain. Indeed it was not overthrown until the time of Galileo in the nineteenth century. Descartes' doctrine of the pineal gland in the brain as the connecting link between soul and body reminds one of the explanation of thought as the opening and closing of a particle of the substance of the brain similar to a worm, which we find in the ninth century Arabic treatise of Costa ben Luca, On the Difference between Soul and Spirit.

'Costa ben Luca represented this particle as forming a sort of valve between the anterior and posterior ventricles and held that when a man was in the act of recalling something to mind this valve opened and the subtle spirits passed from the anterior to the posterior cavity.'

Now hear Descartes' explanation: 'Thus when the soul desires to recollect something this desire

causes the gland by inclining successively to different sides, to thrust the spirits towards different parts of the brain until they come across that part where the traces left there by the object which we wish to recollect are found.'

Thorndike concludes: "Finally before taking leave of Descartes, let us recall that even his claim to be the inventor of analytical geometry must be discounted since Nicholas Oresme had already made use of coördinates in the fourteenth century. Oresme had also employed fractional exponents for powers, an innovation formerly attributed to the sixteenth century mathematicians, Vieta and Stevin."

Very truly yours,

WM. PEARCE COUES, M.D.

February 17th, 1928

THE APPOINTMENT OF DR. PAUL WAKEFIELD

NEW ENGLAND JOURNAL OF MEDICINE.

Mr Editor:

May I announce through your columns the appointment of Dr. Paul Wakefield as Supervisor of Tuberculosis Clinics at present being held in the schools throughout the State. As you know, this is a part of the so-called Ten Year Tuberculosis Program instituted by the Department some three years ago of which Dr. Henry D. Chadwick is the presiding genius. Previously Dr. George M. Sullivan was in charge but he has left to become State District Health Officer in the Northeastern District.

Dr. Wakefield received his A.B. in 1900 from Hiram College, his A.M. in 1907 from Bethany College and his medical degree from Rush Medical College in 1904. From 1905 to 1917 he did hospital work in China with the United Christian Mission Board. In 1917-18 he was in this country as a Fellow of the Rockefeller Foundation and studied at Harvard doing also work with Dr. Place at the South Department and at our State Sanatorium at Westfield under Dr. Chadwick. From 1918 to 1927 he was in charge of student health in the Central China University at Wuchang under the American Episcopal Board. In 1923-24 he was in this country surveying student health activities in colleges and universities in the eastern and central parts of the United States. Through his long experience with student health he has developed the public health point of view and after many months of fruitless search for a competent successor to Dr. Sullivan we feel very fortunate in obtaining the services of a man of his calibre because after all, this extensive program which is being watched by the entire country as the most ambitious attack against tuberculosis ever staged by an official agency, can be no better than the quality of the work given in the clinics under Dr. Wakefield's direct supervision.

Yours truly

GEORGE H. BIOLOW, M.D.,
Commissioner of Public Health

ARTICLES ACCEPTED BY THE A. M. A. COUNCIL ON PHARMACY AND CHEMISTRY

Dear Doctor

In addition to the articles enumerated in our letter of January 28th the following have been accepted:

Hollister Stier Laboratories

Alder Pollen Extract-Hollister Stier, Aspen Pollen Extract-Hollister Stier, Atriplex Pollen Extract-Hollister Stier, Awnless Brome Grass Pollen Extract-Hollister Stier, Blue Bunch Grass Pollen Extract-Hollister Stier, Box Elder Pollen Extract-Hollister Stier, Canada Bine Grass Pollen Extract-Hollister Stier, Cheat Pollen Extract-Hollister Stier, Common Sagebrush Pollen

MASSACHUSETTS TUBERCULOSIS LEAGUE

Three hundred physicians nurses teachers and social workers were in attendance at the mid winter meetings of the Massachusetts Tuberculosis League held at Hotel Statler on Monday and Tuesday February 6th and 7th

On Monday morning a Christmas Seal Sale Meeting of the volunteer and professional workers of the League's affiliated organizations was held. Representatives were present from the counties of Barnstable, Berkshire, Bristol Essex, Franklin Hampden Hampshire Nantucket Dukes Norfolk, Northern Worcester Plymouth Southern Middlesex Southern Worcester and from the city associations in Boston, Cambridge Chelsea Haverhill Hioke Lawrence, Lowell Malden New Bedford Newburyport, Newton and Salem. Frank Kiernan Executive Secretary of the League, presided. Discussion was had of the experience of the associations in the 1927 Seal Sale and plans were laid for improving the technique of the Seal Sale of 1928. Dr Robert B Kerr, Executive Secretary of the New Hampshire Tuberculosis Association Miss Mabel Baird Field Secretary of the Connecticut State Tuberculosis Commission Miss Elsie F Packer of the Hartford Tuberculosis Society and Willis Chandler Executive Secretary of the Rhode Island State Tuberculosis Association were also present and participated in the discussion. Last minute reports on the 1927 Seal Sale returns from the affiliated organizations of the League indicated that the total will be approximately \$252,000 which will exceed the Seal Sale of the previous year by \$12,000. Dr John A. Smith of the National Tuberculosis Association who was present at the meeting congratulated the League and its constituent bodies on this successful result.

Following the morning meeting the semiannual luncheon conference of the Directors Executive Committee, and guests of the League was held. Dr Kendall Emerson President, presided.

In opening the meeting Dr Emerson stated that each year the League endeavors to emphasize an important feature of tuberculosis work. The feature for 1928 will be participation in the Early Diagnosis Campaign which has been announced by the National Tuberculosis Association for the month of March.

Dr Harry E Kleinschmidt, Supervisor of Medical Service of the National Tuberculosis Association spoke on "Why An Early Diagnosis Campaign?"

There are at least 10,000 cases in Massachusetts communities said Dr Kleinschmidt, unknown to either the doctors or the tuberculosis carriers themselves. An investigation of patients in a group of representative sanatoria in the United States recently disclosed the fact that of the patients in these institutions only 16% had been diagnosed as early stage cases. In other words 84% of those entering the sanatoria were classified as advanced cases for whom not very strong reassurance of recovery could be entertained.

He added This is so in spite of the fact that for twenty years the medical profession the National Tuberculosis Association and its subordinate branches in States and cities and towns have been so to speak, shouting from the house tops the necessity of earlier diagnosis.

It therefore seemed to the National Association continued Dr Kleinschmidt that something unusual should be attempted to focus the attention of the public on this very fundamental need in tuberculosis work. It is planned therefore, in the month of March to inaugurate a campaign which will utilize every known medium of publicity for carrying the message of earlier diagnosis to the public at large. The dominant note of the campaign will be "You May Have Tuberculosis—Let Your Doctor Decide." The attention of the medical profession will be again

drawn to the need of better technique of diagnosis. Motion pictures films of a technical and a popular character will be circulated to re-awaken the interest of the medical profession and the laity in the subject. Organized groups everywhere both those especially engaged in health work and those engaged in welfare work of a general character will be reached.

The radio billboard posters the columns of the press, the men's and women's service clubs the nurses professional associations church groups racial groups educational institutions and other agencies will be made the media of carrying the message to their members and to the families of the members in an attempt to reach every person with the need of vigilance where early diagnosis of the disease should be looked for.

The decline in tuberculosis while it has been marked in the past twenty years is still considerably less than it ought to have been and there remains the most important part of the tuberculosis task to be completed namely the reduction of the morbidity and mortality from the disease to the irreducible minimum.

Dr John B Hawes 2nd President of the Boston Tuberculosis Association was the other speaker at the luncheon. He stressed the need of tuberculosis associations carrying home to the public at large the seriousness of being keen about the symptoms of tuberculosis when they appear. His address was on the subject of Suspecting Tuberculosis which he said was a phrase which he borrowed from the recent book of Dr John Potts on Getting Well and Staying Well.

His address bristled with important suggestions and a dramatic appeal for better work in the medical schools for he was convinced that other subjects engage the attention of profession and others to the exclusion of adequate concentration on tuberculosis.

The address was delivered in a way to impress the audience and will we hope impress the doctors to more careful search for the facts which will bring cases of tuberculosis under treatment at a time when better results may be secured.

Dr Tsefang Huang Director of Department of Epidemiology of Union Medical College Peking China spoke on the need of a similar campaign among the people of his country. He expressed the hope that the people in America would think of China in terms of public health progress which is being made there rather than in terms of their upset political condition.

Dr Kroum Dokoff Medical Officer of the Department of Labor in the Province of Varna Bulgaria who is a Rockefeller student at the Harvard School of Public Health expressed his admiration of the intensive character of the tuberculosis campaign as carried on in the United States. He said that the recent war had left a dreadful aftermath of tuberculosis among his people and that in this country he was learning the methods which had been successfully used here in the anti tuberculosis campaign and which he hoped to adapt to the needs of Bulgaria upon his return.

Following the addresses a film of the National Tuberculosis Association for medical audiences entitled "The Doctor Decides" was shown.

Following the luncheon conference a meeting of the Board of Directors and the Executive Committee of the League was held. Rev C P Wellman of Deerfield President of the Franklin County Public Health Association, was elected to the Executive Committee to succeed Mr Sydney W Ashe of Pittsfield.

Dr Francis P Denny Chairman of the Budget Committee of the League presented the budget for 1928 which was adopted.

NOTICE

CERTAIN APPOINTMENTS IN CONNECTION WITH THE UNITED STATES PUBLIC HEALTH SERVICE

Associate Sanitary Engineer Leonard Greenburg Directed to proceed from New Haven, Conn. to Washington, D. C., and return, in connection with the ventilation studies being conducted by the Office of Industrial Hygiene and Sanitation February 2, 1928

Consultant Frank I. Cooper Directed to proceed from Boston, Mass., to Washington, D. C., and return, on February 10, 1928, to advise with the Surgeon General regarding ventilation problems being conducted by the Office of Industrial Hygiene and Sanitation February 2, 1928

Prof. C. E. A. Winslow Directed to proceed from New Haven, Conn. to Washington, D. C., and return, on February 10, 1928, to advise with the Surgeon General regarding ventilation studies being conducted by the Office of Industrial Hygiene and Sanitation February 2, 1928

Surgeon J. P. Leake Directed to proceed from Washington, D. C., to Boston, Mass., and return, for the purpose of conferring with State health officials regarding control of biologic products February 4, 1928

REPORTS AND NOTICES OF MEETINGS

HARVARD MEDICAL SOCIETY

The Harvard Medical Society held a meeting on February 14, 1928, at 8:15 o'clock in the Peter Bent Brigham Hospital. After the presentation of two cases, Dr. H. A. Christian introduced the two speakers of the evening, Drs. E. S. Emery, Jr. and R. T. Monroe, who presented a paper on "Some Observations on 556 cases of peptic ulcer."

The first case was from the medical service of the hospital and presented by Dr. Fitzhugh. The patient was 67 years old, single, American born, a hostler who came into the hospital complaining of weakness. About a month before his admission he became so weak that he was obliged to go to bed and had not been up since. He had had three days of slight abdominal pain without relation to meals. With a red count of 2,500,000 he was sent in with a diagnosis of primary anemia by the local doctor. However, most primary anemias with a red count of that number show no such marked weakness. A gastric analysis demonstrated 60 points of free HCl in the gastric contents and with this and a tarry stool as shown by a positive gualac test, and a slight filling defect on the lesser curvature of the stomach by X-ray, the Sippy management was begun. The red count went up to 3,500,000, the yellow skin tint disappeared and the cerebral derangement improved. No liver was felt.

The second case was presented by Dr. Gundersen. The patient was a married laborer of 58 who came into the hospital on January 21 complaining of nausea, epigastric pain and vomiting of four months duration. His marital and family history were essentially negative. His past history included not only the symptoms on entering but much trouble with his teeth and pharynx. Physical examination showed slight cardiac enlargement with a systolic murmur, very bad teeth and tonsils, marked arcus senilis and slight tenderness in the epigastrium. He had lost 25 pounds during the present illness. Gas-
tric analysis showed a definite increase in acidity and X-ray showed a persistent irregularity of the

distal end of the stomach. In view of the fact that he had a 50% residue at the end of six hours and was not doing well on medical management, he was transferred to the surgical service. After opening the abdomen through an upper right rectus incision many adhesions were found between the stomach, gall bladder, liver and duodenum which were freed. Ulcers were found along the lesser curvature of the stomach and in the first part of the duodenum. Gastric resection with gastro-jejunostomy was performed in order to prevent stasis in the proximal loop of the jejunum; an entero-enterostomy was also done. During the uneventful recovery the patient has been absolutely symptom free and is to be discharged soon.

Dr. Monroe first presented the actual findings in the research. All the ulcer cases of the Peter Bent Brigham Hospital from its opening in 1913 up to 1926 were included in the report. Of the 556 cases thus collected 400 were men and 156 were women. The cases had a history of an average duration of seven years. 34% had hemorrhage, 7% perforation, and 7% died. The general results with treatment were 37.8% good and improved and 40.6% unimproved. With medical treatment alone 51.3% were improved, 48.7% unimproved, with surgical treatment alone 59.6% were improved and 40.4% unimproved. On the whole surgery gave better results. The reasons for failure after either treatment were the existence of pain, hemorrhage, obstructions, jejunal ulcer, fistulae or dissatisfaction on the part of the patient. About half of the medical or surgical patients resorted to the other kind of treatment after the failure of the previous one. On the medical side the Sippy diet when rigidly adhered to for at least a year gave the best results. On the surgical side excision of the ulcer did the least good and gastro-enterostomy with plication accomplished the most.

Dr. Emery presented conclusions based on the figures which he indicated are obviously low. This is due, first, because the standard of classification was practically made by the patients themselves in the replies to the follow-up letters and second, because the cases were followed over a longer period of time than is usually the custom in making such statistics, thus checking up on more relapses. Dr. Emery emphasized the importance of a standard for the publishing of results which on less than a five-year follow-up are of no value. In the follow-ups it is hard to differentiate the recrudescence of an old ulcer from the development of a new one despite the fact that the ulcer usually returns in the same place. Some cases seem to show an alternate healing and relapse of the same ulcers. The use of the X-ray in the diagnosis of ulcer is becoming increasingly valuable. 36% of the 556 cases were diagnosed as against a negative X-ray, while 93% of the cases which showed ulcer by X-ray actually had it. As regards treatment the figures seem to show that we are not using the most efficient because 49% of the untreated cases became better, while medicine only helped 43% of its quota and surgery only 40%. The conclusions to be drawn are obvious: first, gastric and duodenal ulcers are caused by some etiologic pathological conditions; second, ulcer is a chronic disease and should be treated over a long period like nephritis, diabetes, etc.; third, fewer claims should be made for ulcer treatment as it is now.

In the interesting discussion following the presentation of the paper, Dr. Emery brought out the points that the occurrence of ulcer had no apparent relation to age, that better results were obtained with ulcers of short duration, that the incidence of ulcer in the Peter Bent Brigham Hospital is 1.86% of all patients, that more patients are applying for surgical treatment rather than to medicine for relief.

be the selection of not an M.D. a psychologist or a psychiatrist, but an individual having qualifications which will insure better mental hygiene work. Combine this with common sense and the result is ideal.

THE CUTTER LECTURE

The Lecture on Preventive Medicine was given on the afternoons of February 2 and 3 1928 at the Harvard Medical School by Dr. W. H. Frost of Johns Hopkins University. On Thursday Dr. Frost discussed the infection immunity and disease in the epidemiology of diphtheria, with special reference to some studies in Baltimore. In his second talk he brought out some conceptions of epidemics in general.

Infection with disease said Dr. Frost implies two things: inoculation and susceptibility. It has been shown however that there may be inoculation without susceptibility. This concealed infection is important and because in diphtheria it is possible to diagnose these carriers this fact makes the study of diphtheria one of basic principles which perhaps underlie all epidemics. The Schick test is perhaps the best indicator available. A negative Schick is evidence of immunity against the disease and not to infection; it is probably due to a previous slight infection. A positive Schick does not necessarily mean high susceptibility.

A recent study in Baltimore extending over three years and including 9,000 children under the age of 15 gave the following results: Infants up to one year are all Schick negative. Then they all become Schick positive. As the age increases the number of Schick negatives obtained also increases. Since only 9.12% of the group had had clinical diphtheria, this cannot be assigned as the cause for the increasing immunity. The negro population had the same ratio of Schick negatives but a smaller incidence of the clinical disease. Since the same condition exists in South America one must assume a racial difference. In comparing the number of virulent carriers to the clinical incidence of the disease in children from the ages of 5 to 14 the average is 47 to one.

These studies may be important in giving us some ideas about the epidemiology of such diseases as poliomyelitis and encephalitis lethargica.

The studies of epidemics in general are carried out in two ways: a study of statistics and experimental studies with laboratory animals. These have tended to accentuate the ideas of post-susceptibility, dosage, and variations of microbial populations and have also given some ideas about the factors of resistance and the nature of the bacteria.

Brownley of England has formulated a law of epidemics in which he states that the rise of epidemics is due to a rise and decline in the infecting properties of the microorganism. Dr. Frost showed that this law is not broad enough. The three most important variables in epidemics are first, the microbial population which may vary in number and specific properties such as infectivity and pathogenicity; second, the host population which may vary in susceptibility or in numbers; and third, the environment to effect inoculation may vary. These are so interwoven that no single cause can be assigned to an epidemic. Epidemics may be initiated by increased rate of transfer, increased contact as in schools, and increased staying indoors in the colder months. Though the initial impulse be small due to the arithmetical progression of the incidence of the disease the result may be very great.

A study of great historical epidemics shows that epidemics are not due to abnormal conditions such as would obtain in an army nor are they due to a general lowering of resistance. The probable cause is a change in the virulence of the specific organism.

In a consideration of all these variables Dr. Frost

concluded that in our present state of knowledge we cannot assign a general law which governs all epidemics.

TRUDEAU SOCIETY OF BOSTON

The next meeting of the Trudeau Society of Boston will be held on Wednesday evening March 21 1928 at 8:15 p.m. in John Ware Hall Boston Medical Library, 8 The Fenway Boston.

The speaker will be Dr. Edward W. Archibald of Montreal subject: Selection of Patients for Surgical Treatment in Pulmonary Tuberculosis. Dr. Wyman Whittemore and Dr. Edward D. Churchill have been asked to lead in the discussion.

Physicians, medical students and nurses are cordially invited to attend this meeting.

RANDALL CLIFFORD *Secretary*

HARVARD MEDICAL SOCIETY

The next regular meeting of the Harvard Medical Society will be held as usual in the amphitheatre of the Peter Bent Brigham Hospital Tuesday evening March 13th at 8:15 P.M. The program follows:

Presentation of cases

The Harvard African Expedition of 1927 with reference to Biology and Medicine. Dr. Richard P. Strong.

PERCY AL. BAILEY, *Secretary*

SOCIETY MEETINGS

March 8—Massachusetts General Hospital Staff Clinical Meeting. Complete notice appears on page 114 issue of March 1.

March 13 April 10—Massachusetts Dietetic Association. For complete notice see page 1535 issue of February 9.

March 13—Harvard Medical Society. Detailed notice appears above.

March 21—Trudeau Society. Complete notice appears elsewhere on this page.

June 18-22—Convention of the Catholic Hospital Association. Complete notice appears on page 1597 issue of February 16.

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

May 2, 1928 (Wednesday)—Annual meeting at Haverhill 12:30 P.M. at the Haverhill Country Club Brickett Hill, Gile Street, Haverhill.

May 3, 1928 (Thursday)—Censors meet for examination of candidates at Hotel Bartlett, 95 Main Street, Haverhill at 2 P.M. Candidates should apply to the Secretary, J. Forrest Burnham, M.D., 567 Haverhill Street, Lawrence at least one week prior.

Essex South District Medical Society

April 11 (Wednesday)—Essex Sanatorium, Middleton Clinic at 5 P.M. Dinner at 7 P.M.

Dr. Raymond S. Titus, Obstetrical Emergencies. Discussion by Drs. J. J. Egan of Gloucester and A. T. Hawes of Lynn 10 minutes each and from the floor.

May 3 (Thursday)—Censors meet at Salem Hospital for the examination of candidates at 3:30 P.M. Candidates should apply to the Secretary, Dr. R. E. Stone, Beverly at least one week prior.

May 8 (Tuesday)—Annual meeting. Detailed notice appears on page 1437 issue of January 26.

Norfolk District Medical Society

March 27—Meeting at the Norwood Hospital. Presentation of paper or cases from members of the District.

May 3—Censors meeting. Roxbury Masonic Temple 4 P.M. Applications will be mailed by the Secretary upon request.

May 8—Annual meeting. Details to be announced.

Suffolk District Medical Society

Combined meetings of the Suffolk District Medical Society and the Boston Medical Library will be held at the Boston Medical Library, 8 The Fenway at 8:15 P.M. as follows:

The Seal Sale contract between the National Association and the State League and similar contract between the League and its affiliated organizations were approved

Dr Emerson announced plans for the Annual Meeting of the League to be held at Hotel Kimball, Springfield, on Monday, April 30th

The Executive Secretary reported that the State Department of Public Health and the League will shortly issue a pamphlet on "Home Treatment of Tuberculosis"

The proposed constitution of the Massachusetts Central Health Council, of which the League is a member, was ratified

While the Board of Directors' meeting was in progress in an adjacent room a meeting of the staffs of the affiliated organizations of the League and the staffs of the Division of Child Hygiene and Tuberculosis of the State Department of Public Health was in session. The object of the meeting was to discuss problems of mutual interest and to have the staff members of the three groups meet each other personally. Frank Klernan, Executive Secretary of the League, presided

Dr M E Champlon of the Division of Hygiene of the State department of Health Dr Sumner H Remick of the Division of Tuberculosis Miss Margaret Ayer, a District Nurse of the Department, Dr George P Hunt of Pittsfield, President of the Berkshire County Tuberculosis Association, Miss Florence Bragdon, R.N., Executive Secretary of the Northern Worcester County Health Association were the speakers. Dr George H Bigelow, State Commissioner of Public Health gave a comprehensive summary of the matters brought out by the other speakers

On Tuesday morning a Health Education Meeting was held under the leadership of Miss Anna W Johnson, Educational Secretary of the League. The subject was 'The Place of Health Education in the School Curriculum'

The several speakers who discussed this subject from their standpoint as school and health officials were as follows: Mr Frank A Morris, Superintendent of School of Stoughton, Mr Richard Schmoeyer, Director of Physical Education of Lynn, Miss Elizabeth Sampson, Principal of Hedge School in Plymouth, Miss Mary F McDermott, Director of Physical Education and Hygiene State Normal School, Fitchburg, Miss Julietta Delahanty, Teacher in the Wm Greene School of Fall River, Miss Margaret Burke, Director, Physical Education, Somerville, Miss Edith Haines, R.N., School Nurse in Dracut, and Mrs Edythe James, School Nurse in Leominster

A special feature of the morning session was the appearance of Mr E E Clive Director of the Copley Theatre, Boston, who spoke on the Drama as a Medium for Health Education. Mr Clive annually gives the use of his theatre for the production of the successful plays of the Health Playwriting Contest

BOSTON MEDICAL HISTORY CLUB

A regular meeting of the Boston Medical History Club was held at the Boston Medical Library February 24th, 1928

Dr Hyman Morrison read a paper on The Early Jewish Physicians in America. He pointed out that many Jewish physicians came to this country from Spain and Portugal in the early days. It seems reasonably certain that the physician with Columbus in his voyage of discovery was a Jew. Most of the early Jewish physicians settled in the southern States especially in Georgia, where they took a prominent part in the founding of medical societies and in philanthropic work in general. After the Revolution of 1845 many Jewish physicians came to

this country from Central Europe, especially from Germany, Poland and Russia. Some have been outstanding physicians in their communities. Dr Morison presented the important works of the best known Jewish physicians and showed many photographs of them. He also spoke briefly on some of the later Jewish physicians men of great importance to medicine in America in the last seventy five years.

Dr Morison's paper was discussed by Drs Coues, Gregg and Fulton

Mr James Ballard then briefly described two early anatomical 'fugitive sheets' which he discovered in the back of a copy of the German edition of the *Epitome of Vesalius* in the Boston Medical Library. These two anatomical figures, carefully colored and containing many superimposed parts, are in an excellent state of preservation and form two of the rarest 'fugitive sheets' in this country and perhaps in the world

MASSACHUSETTS PSYCHIATRIC SOCIETY

A meeting of the Massachusetts Psychiatric Society was held at the Boston Psychopathic Hospital on Friday February 17, 1928. Dr Frankwood E. Williams, Medical Director of the National Committee for Mental Hygiene, New York City, spoke on the subject 'The Future Equipment of Personnel in the Field of Mental Hygiene'

In defining the field of mental hygiene, Dr Williams said, in substance that one must approach the subject from two directions. The first real advance was when the workers began to study people and gave up the attempt to make complicated laws. In the attempt to prevent mental diseases, both organic and functional they found themselves confronted by the problem of the emotional child. The other approach is found in the fields of psychiatry. This necessitated more accurate classification of mental diseases by the employment of scientific study and instruments of precision. Second, the search for causes of mental diseases conducted by men trained especially for this work. Third, a study of the individual. Dr Williams emphasized the fact that the problem lies in the field of human relations with the appreciation of the maladjustments in the life of the child the adolescent and the adult. Not only should we try to adjust the patient to his environment, but also to change the environment as far as possible to suit the needs of the patient. It is a long complicated study, the point of attack being the patient together with influences with which he is surrounded

The treatment of psychoses and neuroses involves dealing with both functional and organic conditions. It is clear that the psychic maladjustments are primary, but where the physical defect begins it is hard to determine. In the field of mental hygiene psychoses and neuroses are to be definitely studied even to the minor deviations referred to as tantrums. Three different types of investigators are engaged in this study consisting of the psychiatrist, social worker whose training has been brief and not especially comprehensive, the psychologist who has profound but narrow foundation in his training with only 20% of his study applicable and finally there is the medical psychiatrist whose training has been too extensive and not enough in one field. At the present time the medical psychiatrist is best adapted to the work

Much energy is lost when different agencies are at work, and Dr Williams proposed an ideal training for workers in the field of mental hygiene. This training must first be biological. All clinical medicine not directly bearing on the subject must be eliminated. Finally a study of psychology and social work must be carried on. Generally speaking the training should include only what is necessary and applicable and yet adequate. The result would

The New England Journal of Medicine

VOLUME 198

MARCH 15, 1928

NUMBER 4

ORIGINAL ARTICLES

THE ANTIDIURETIC EFFECT OF THE OXYTOCIC AND PRESSOR PRINCIPLES OF THE EXTRACT OF THE POSTERIOR LOBE OF THE PITUITARY

BY S L GARGLE, M.D., D R GILLIGAN, AND H L BLUMGART, M.D.*

INTRODUCTION

IT is a well established fact that subcutaneous injection of the extract of the posterior lobe of the pituitary relieves the thirst and polyuria of patients with diabetes insipidus. The recent separation by Kamm and associates¹ of the extract of the posterior lobe of the pituitary into two parts one having a pressor, and the other an oxytocic action, has raised the interesting question as to which fraction is responsible for the antidiuretic effect of pituitary extract. The results of animal experimentation are not closely analogous to clinical experience. The present studies have, consequently, been carried out directly on man. The effect of the subcutaneous injection of the oxytocic and pressor principles on water diuresis has been observed in four normal individuals and in two patients with diabetes insipidus.

NORMAL SUBJECTS

Method The normal subjects were given constant salt and protein diets, and the fluid intake and urinary output were carefully measured. After 24 hours on this regime a liter of water was given at 7 a. m., and the urine was collected hourly for seven hours, basal conditions being maintained by omitting breakfast and delaying lunch until 2 p. m. The next day 0.25 cc of vasopressin were given hypodermically when the liter of water was taken at 7 a. m. The following day the same procedure was repeated except that oxytocin was substituted for vasopressin.

Effect of Vasopressin and Oxytocin on Water Elimination Curve In Figures I, II, III and IV are charted the urinary outputs of the four normal subjects after drinking a liter of tap water. The effect of vasopressin and oxytocin upon the urinary output is also shown.

In 1922, Weir, Larson and Rowntree² pointed out that subcutaneous administration of pituitary extract definitely checked the occurrence of

water diuresis in normal man. Our results are in harmony, since a single dose of 0.25 cc of vasopressin delayed onset of diuresis for five hours in J.D., and for four to five hours in W.E., A.R., and D.L. By the end of seven hours, W.E. (Fig. I) excreted only 38 per cent of the liter of water, while without medication he excreted almost 100 per cent within four hours. J.D. (Fig. II) excreted 88 per cent of the liter of water within three hours, when no medication was given, whereas when 0.25 cc of vasopressin were given, the total excretion was only 40 per cent at the end of seven hours. Without medication, A.R. (Fig. III) excreted the liter of water within three hours, while after a single dose of 0.25 cc vasopressin, he excreted only 47 per cent within seven hours. Vasopressin had the most marked effect on D.L. (Fig. IV), who excreted only 31 per cent of the liter of water in seven hours.

The effect of oxytocin on the excretion of the liter of water was distinctly less, that is to say, W.E. (Fig. I) excreted 65 per cent, J.D. (Fig. II) 64 per cent, and D.L. (Fig. IV) 60 per cent of the liter of water in seven hours. In A.R. (Fig. III), however, oxytocin had no effect, he excreted a little over the liter of water within seven hours. The slight antidiuretic effect observed may be due to the presence of a trace of the pressor hormone. Assay by the pressor method indicated that the sample of oxytocin used in this work contained about 4 per cent of pressor activity for each 100 per cent of oxytocic activity.¹

PATIENTS WITH DIABETES INSIPIDUS

The effect of the two fractions of the posterior lobe of the pituitary was also studied in two patients with diabetes insipidus. As has been previously shown², patients with diabetes insipidus may serve as extraordinarily sensitive indicators of the antidiuretic effect of posterior lobe pituitary extracts, as little as 0.05 cc of pituitrin "O" hypodermically being sufficient in some cases to diminish conspicuously the urinary output.

*From the Thorndike Memorial Laboratory, Boston City Hospital and the Department of Medicine, Harvard Medical School.

March 28—Medical Section The Use and Misuse of Vaccines Dr. Hans Zinsser, Dr. Francis M. Radru-mann, Dr. Charles H. Lawrence
April 25—Annual meeting Election of officers Paper of the evening to be announced later

The medical profession is cordially invited to attend these meetings

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear

BOOK REVIEWS

Diseases of the Skin By HENRY H. HAZEN, C. V. Mosby Company, St. Louis, 1927 572 pages Third Edition

Since the first edition of Hazen's book in 1915 it has been one of the standard smaller books on dermatology. The present edition has been enlarged and thoroughly brought up to date with due emphasis on the newer laboratory methods and the rational use of physiotherapeutic measures. This book has the unique distinction of not having a chapter on eczema save for a short account of infantile eczema. Cases ordinarily classified in this group are considered under dermatitis venenata, anaphylactic dermatoses and dermatophytosis. The chapters on syphilis and cancer are especially valuable and are indicative of the close study which the author has given these two diseases. The book is very well arranged and is noteworthy for the many very excellent photographs of both common and unusual conditions.

Epidemic Influenza A Survey EDWIN O. JORDAN, PH.D., Sc.D.

At the invitation of the Committee on Scientific Research of the American Medical Association Professor Edwin O. Jordan surveyed the literature of the influenza epidemic of 1918. Such topics are discussed as the relation of the 1918 influenza epidemic to the influenza of preceding years, the nature and course of the epidemic, the attack rate as it affected age, sex, race, occupation, and geographical location, the relationship between influenza, tuberculosis, and epidemic encephalitis, the bacteriology and pathology, the modes of transmission, the preventive measures, and the analysis of the epidemiological data.

In addition to reflecting Dr. Jordan's personal experience with the disease, the book comprises a digest of over 1200 articles. After weighing the pros and cons of various controversial topics such as conclusions as he draws are upon sound evidence. Among these the most noteworthy are as follows: Influenza is found to be independent of weather, climate, or season, it is probably transmitted by discharges from the nose and mouth, crowding is an important factor in its spread, perfect isolation of an individual or group during an influenza epidemic constitutes a complete protection against the disease. The epidemics of 1918, 1920 and 1926 may be considered, so far as cause is concerned as identical with the one of 1890 but it is hardly justifiable to identify as influenza all the sporadic cases and localized epidemics of inter-epidemic years.

Dr. Jordan concludes with the following: On the whole the hypothesis of the coexistence of different strains of influenza virus has much in its favor. Each strain probably breeds more or less true, but each is also capable of more or less gradual transformation the more virulent into less virulent strains perhaps because of growth in bodies of partially immunized persons, the less virulent into highly invasive strains because of modification by unknown causes. In common with most infectious diseases the degradation of the influenza virus takes place fairly readily following perhaps the accumulation (even temporarily) of immunes. The successive waves and recurrences seem to indicate however

that some exaltation of the virus may also occur with considerable facility and frequency, particularly after the original pandemic strain has been widely disseminated. As time goes on the appearance of strains with a high grade of diffusive power becomes more rare, and after a lapse of years it is only occasionally that a typical pandemic strain comes into existence. The ebb and flow of certain other infectious diseases notably diphtheria and scarlet fever, suggest a somewhat similar explanation. It seems to me at least a plausible hypothesis that the coming into existence of a peculiar strain of influenza virus different from the strains of epidemic influenza is the cause of the pandemic manifestations.

Every Woman A Nurse By EDITH NEWSOME, S.R.N.

This interesting and instructive handbook was published by the Oxford University Press in 1927. It is intended for the use of nursing societies, technical school classes, Red Cross and ambulance associations, etc., and in the home being a revision of Miss Newsome's book *Home Nursing* published in 1916, with additional chapters on Hygiene, Some Children's Ailments, Simple Remedies, and First Aid.

Miss Newsome devotes chapters to the following subjects: The Qualifications and Duties of the Nurse, Care of the Patient (On Admission, During Illness and After Death), Temperature of the Body, Respiration, Inflammation (Its Causes, Signs and Treatment), Infection, Enemata, Bedsores and Fractures, Operations, and Diets and Feeding. There are also chapters on bandages one describing the types and another entirely devoted to illustrations (thirty-one in number).

The author's treatment of the subjects under consideration is so thorough and simple that the lay person, finding himself called upon to assist in caring for the sick, is easily able to understand the methods recommended for procedure. The book is recommended for the use of lay persons interested in home nursing.

Diseases of the Skin By ROBERT W. MACKENNA, The Williams & Wilkins Company, Baltimore Md., 452 pages

This second edition has been considerably revised and enlarged. It is essentially a practical textbook for students and general practitioners. There is a comparatively small amount of space devoted to elementary matters such as anatomy, physiology, general diagnosis and treatment, etc. The arrangement of the various skin diseases is based on etiological factors instead of the usual arrangement in this country. The terminology and the treatment vary somewhat from American practice but are based on sound principles. There are many excellent photographs and the colored illustrations are among the best in any dermatological textbook. In the matter of treatment, the more common methods are discussed, but the book does not pretend to be a compendium of possible therapeutic measures. On the whole it can be recommended as an up-to-date textbook of dermatology, with the emphasis naturally enough on the opinions of our English colleagues.

BOOKS RECEIVED FOR REVIEW

Diagnosis and Treatment in Diseases of the Lungs, by Tylicote and Fletcher. Published by the Oxford University Press. 270 pages. Price \$2.25.
Clinical Researches in Acute Abdominal Disease, by Zachary Cope. Published by the Oxford University Press. 207 pages. Price \$3.50.
Baby's Health Day by Day. Published by The Professional Press Inc.
Physical Diagnosis, by Charles P. Emerson. Published by J. B. Lippincott Co. 553 pages.

The New England Journal of Medicine

VOLUME 198

MARCH 15, 1928

NUMBER 4

ORIGINAL ARTICLES

THE ANTIDIURETIC EFFECT OF THE OXYTIC AND PRESSOR PRINCIPLES OF THE EXTRACT OF THE POSTERIOR LOBE OF THE PITUITARY

BY S L GARGLE, M.D., D R GILLIGAN, AND H L BLUMGART, M.D.*

INTRODUCTION

IT is a well established fact that subcutaneous injection of the extract of the posterior lobe of the pituitary relieves the thirst and polyuria of patients with diabetes insipidus. The recent separation by Kamm and associates¹ of the extract of the posterior lobe of the pituitary into two parts, one having a pressor, and the other an oxytocic action, has raised the interesting question as to which fraction is responsible for the antidiuretic effect of pituitary extract. The results of animal experimentation are not closely analogous to clinical experience. The present studies have, consequently, been carried out directly on man. The effect of the subcutaneous injection of the oxytocic and pressor principles on water diuresis has been observed in four normal individuals and in two patients with diabetes insipidus.

NORMAL SUBJECTS

Method. The normal subjects were given constant salt and protein diets, and the fluid intake and urinary output were carefully measured. After 24 hours on this regime a liter of water was given at 7 a. m., and the urine was collected hourly for seven hours, basal conditions being maintained by omitting breakfast and delaying lunch until 2 p. m. The next day 0.25 cc of vasopressin were given hypodermically when the liter of water was taken at 7 a. m. The following day the same procedure was repeated except that oxytocin was substituted for vasopressin.

Effect of Vasopressin and Oxytocin on Water Elimination Curve. In Figures I, II, III, and IV are charted the urinary outputs of the four normal subjects after drinking a liter of tap water. The effect of vasopressin and oxytocin upon the urinary output is also shown.

In 1922, Weir, Larson and Rowntree⁵ pointed out that subcutaneous administration of pituitary extract definitely checked the occurrence of

water diuresis in normal man. Our results are in harmony, since a single dose of 0.25 cc of vasopressin delayed onset of diuresis for five hours in J.D., and for four to five hours in W.E., A.R., and D.L. By the end of seven hours, W.E. (Fig. I) excreted only 38 per cent of the liter of water, while without medication he excreted almost 100 per cent within four hours. J.D. (Fig. II) excreted 88 per cent of the liter of water within three hours, when no medication was given, whereas when 0.25 cc of vasopressin were given, the total excretion was only 40 per cent at the end of seven hours. Without medication, A.R. (Fig. III) excreted the liter of water within three hours, while after a single dose of 0.25 cc vasopressin, he excreted only 47 per cent within seven hours. Vasopressin had the most marked effect on D.L. (Fig. IV), who excreted only 31 per cent of the liter of water in seven hours.

The effect of oxytocin on the excretion of the liter of water was distinctly less, that is to say, W.E. (Fig. I) excreted 65 per cent, J.D. (Fig. II) 64 per cent, and D.L. (Fig. IV) 60 per cent of the liter of water in seven hours. In A.R. (Fig. III), however, oxytocin had no effect, he excreted a little over the liter of water within seven hours. The slight antidiuretic effect observed may be due to the presence of a trace of the pressor hormone. Assay by the pressor method indicated that the sample of oxytocin used in this work contained about 4 per cent of pressor activity for each 100 per cent of oxytocic activity¹.

PATIENTS WITH DIABETES INSIPIDUS

The effect of the two fractions of the posterior lobe of the pituitary was also studied in two patients with diabetes insipidus. As has been previously shown², patients with diabetes insipidus may serve as extraordinarily sensitive indicators of the antidiuretic effect of posterior lobe pituitary extracts as little as 0.05 cc of pituitrin "O" hypodermically being sufficient in some cases to diminish conspicuously the urinary output.

*From the Thorndike Memorial Laboratory, Boston City Hospital and the Department of Medicine, Harvard Medical School.

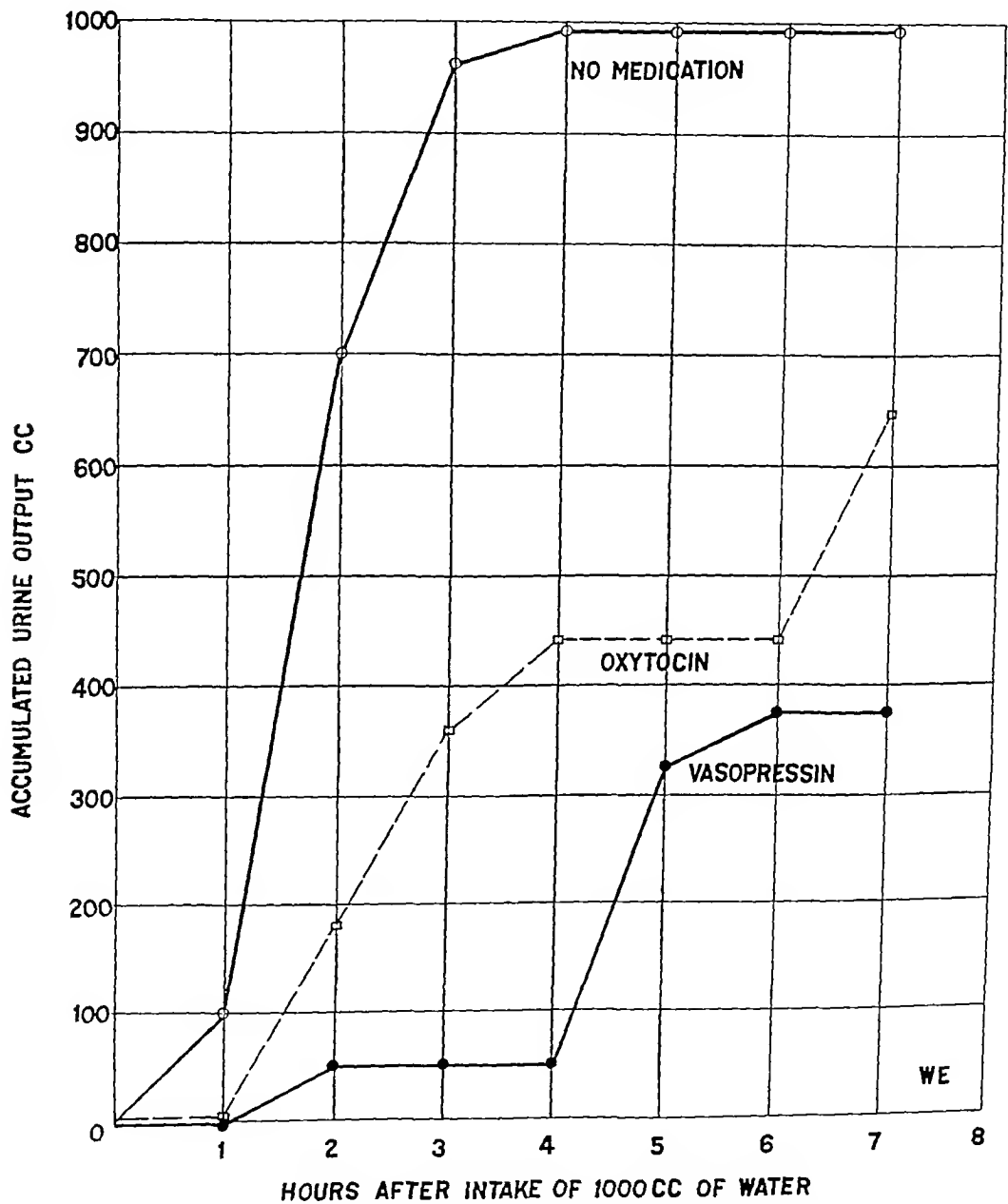


FIG 1. Elimination of a liter of water by subject W E when no medication was given and when vasopressin and oxytocin respectively were given. Liter of water was given at 0. On two subsequent days vasopressin and oxytocin respectively were given at 0 with the liter of water

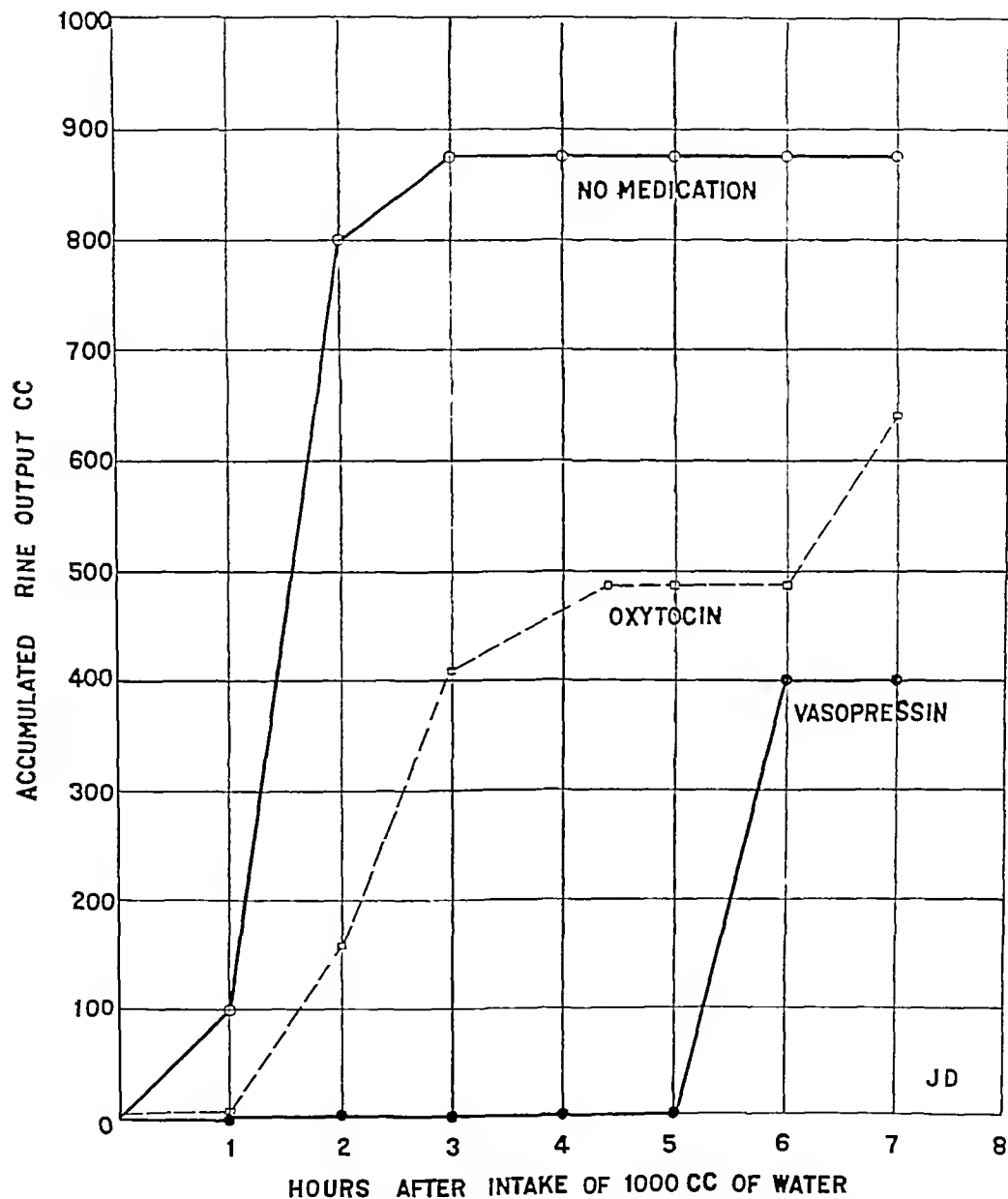


FIG. 11. Elimination of a liter of water by subject J. D., when no medication was given, and when vasopressin and oxytocin respectively were given. Liter of water given at 0. On two subsequent days vasopressin and oxytocin respectively were given at 0 with the liter of water.

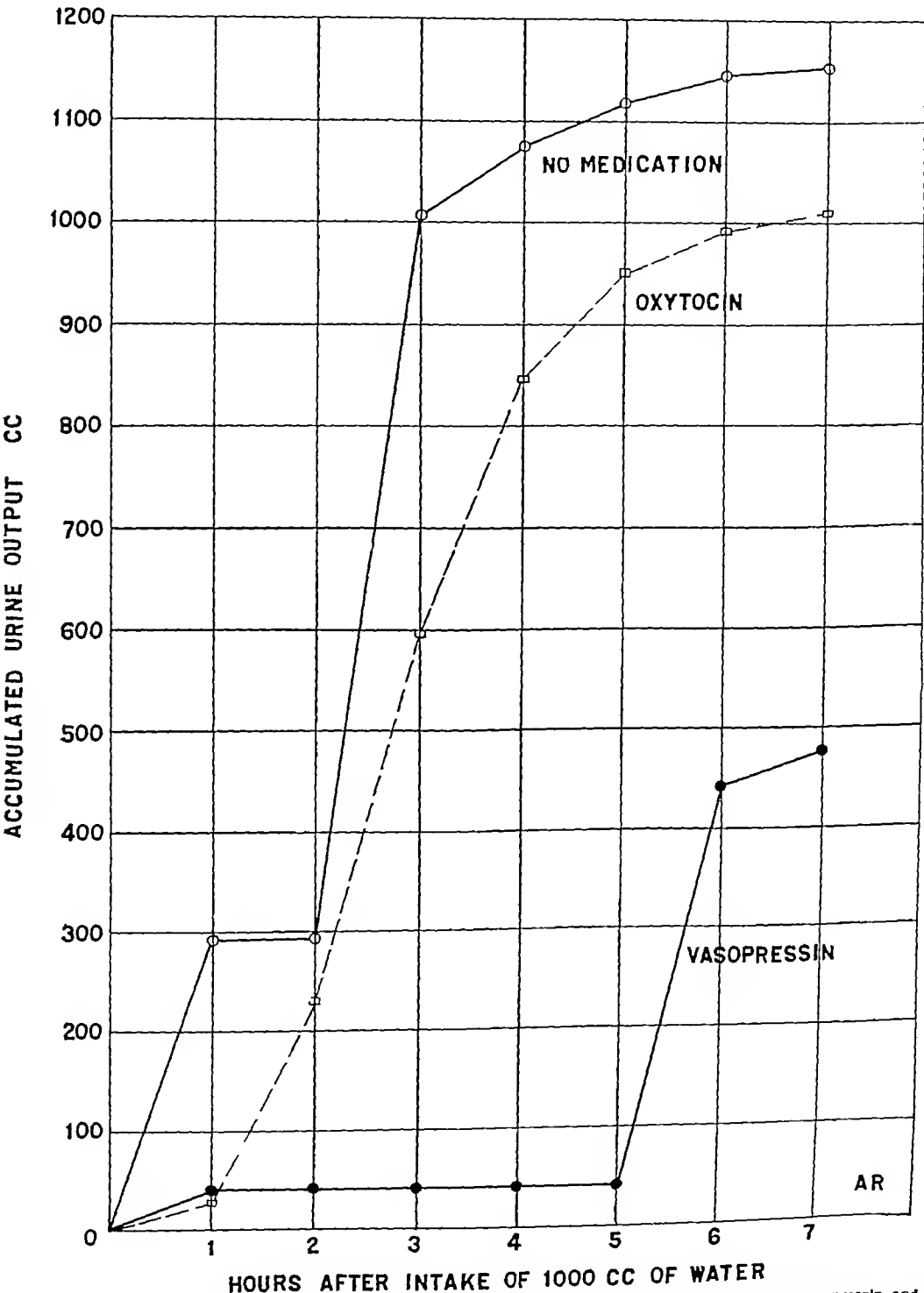


FIG III. Elimination of a liter of water by subject A. R. when no medication was given and when vasopressin and oxytocin respectively were given. Liter of water was given at 0. On two subsequent days vasopressin and oxytocin respectively were given at 0 with the liter of water.

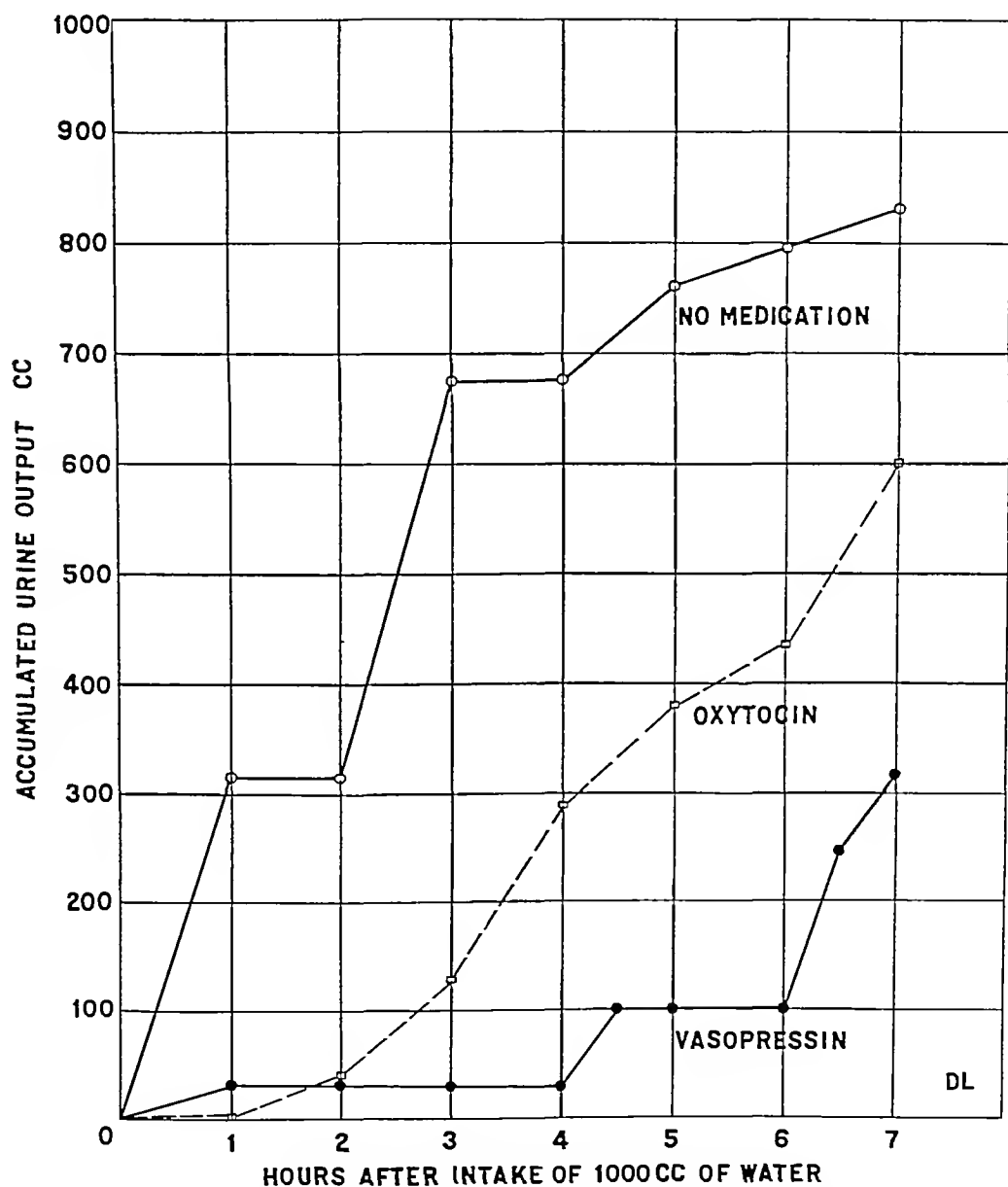


FIG IV Elimination of a liter of water by subject D L when no medication was given and when vasopressin and oxytocin respectively were given. Liter of water was given at 0. On two subsequent days vasopressin and oxytocin respectively were given at 0 with the liter of water

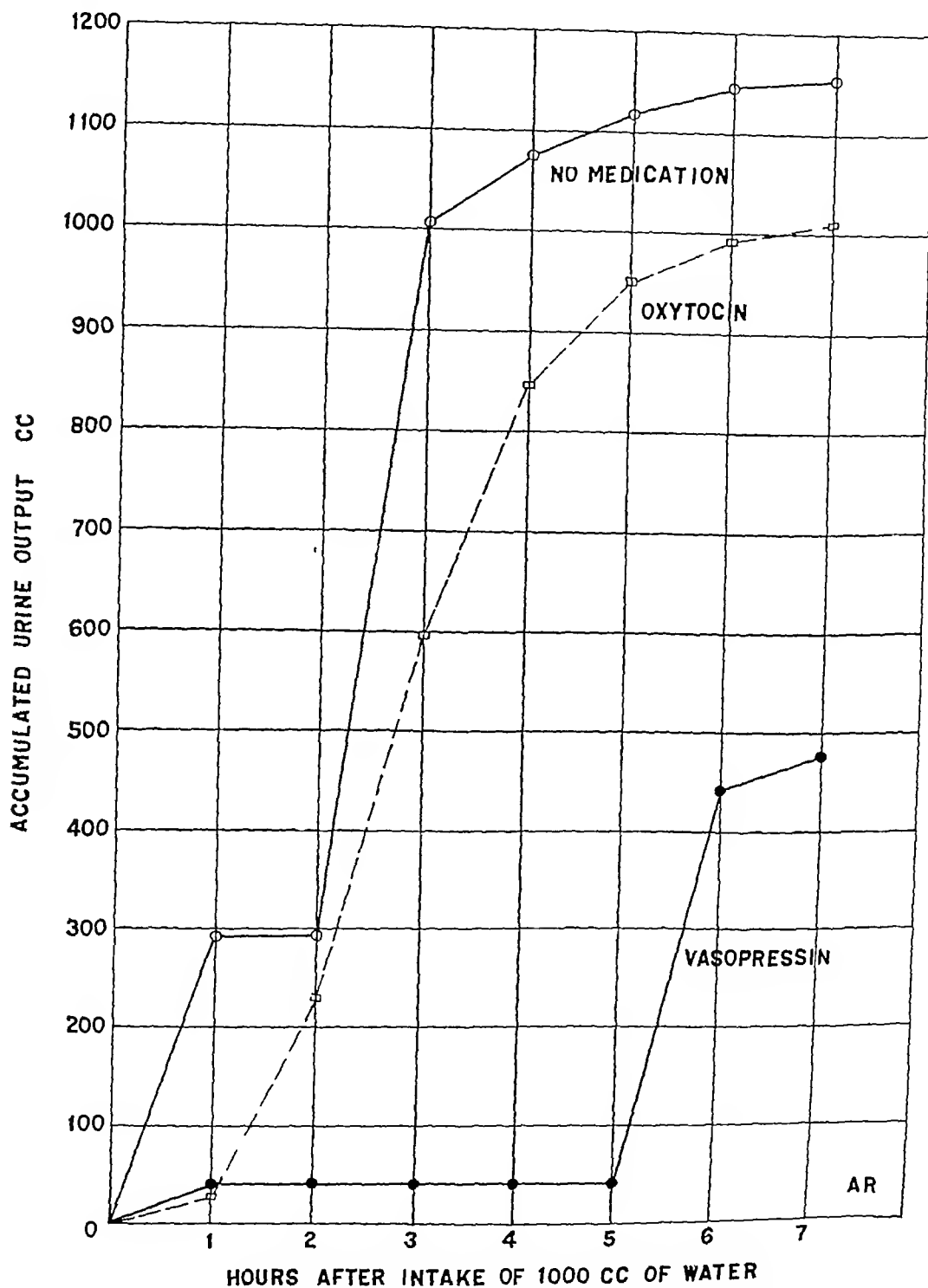
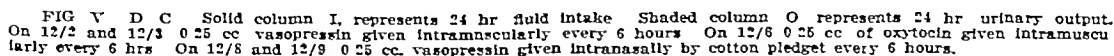


FIG. III. Elimination of a liter of water by subject A. R. when no medication was given and when vasopressin and oxytocin respectively were given. Liter of water was given at 0. On two subsequent days vasopressin and oxytocin respectively were given at 0 with the liter of water.

As indicated by Figs V and VI, oxytocin had



1 In four normal men single doses of vasopressin checked the excretion of a liter of water

One of the patients (D C) was a white married woman, aged 39, whose polyuria and polydipsia began suddenly in 1922 following pseudocyesis. Otherwise she had felt well save for occasional tinnitus and headaches. The physical examination, including x-ray, blood and spinal fluid studies, was negative. The etiology was obscure. Thirst appeared to be definitely primary. Treatment up to the time of admission had consisted of 0.5 cc of "O" pituitrin, applied intranasally by means of a cotton pledget twice daily. This was sufficient to control the thirst and polyuria.

The second case of diabetes insipidus (H N) was a young man, aged 21, whose complaints began about two years before admission, following an attack of influenza. The physical examination, including x-ray, blood and spinal fluid studies, was entirely negative. Diabetes insipidus was possibly post-encephalitic. He had been kept perfectly comfortable with intranasal applications of pituitrin "O" twice a day.

Method Both patients were placed on constant salt and constant protein diets. The protein and the salt contents of the diets were as low as practicable. To avoid monotony two diets of almost equal protein and salt content were alternated from day to day, and the amounts

consumed were recorded. The fluid intake and urinary output were carefully measured and recorded. Urinalysis included quantitative determinations of chloride and nitrogen, according to the methods of Folin^{3, 4}.

The patients received the standard diet, but no medication, for 24 hours. Then 0.25 cc of vasopressin (the pressor fraction) were given hypodermically every six hours for 24 hours. Twenty-four hours without medication were allowed to elapse before hypodermic administration of 0.25 cc of oxytocin (the oxytocic fraction). After 24 hours without medication, the patient received vasopressin intranasally by cotton swab every six hours. For purpose of comparison, one of the patients (H N) was given also pituitrin "S" intranasally during another test day.

Effect of Vasopressin and Oxytocin on Thirst and Polyuria Tables I and II contain the data on urinary output, specific gravity, and sodium chloride and nitrogen concentrations in the urine. The relation of medication is also indicated.

The effect of medication on fluid intake and urinary output is shown graphically in Figures V and VI. The hypodermic administration of 0.25 cc of vasopressin every six hours for 24

TABLE I—PATIENT D C

Date Dec, 1927	Medication	Urinary Output cc	Sp Gr	NaCl		Protein Intake gms/day	Nitrogen con urine mgs/100cc	Wt of Pt lbs
				Con Urine mgs/100cc	Intake gms per day			
1	None	4720	1.003	100	1.793	36.17	104	140
2	8 hr Hypo Vasopressin	550	1.009	109	2.176	47.61	414	140
3	8 hr Hypo Vasopressin	1755	1.006	52	2.909	43.26	362	140
4	None	4235	1.003	78	1.237	39.13	158	139
5	None	4670	1.003	50	1.845	37.50	136	137
6	8 hr Hypo Oxytocin	2710	1.002	74	2.027	31.76	150	137½
7	None	3675	1.002	54	1.589	34.96	130	137½
8	6 hr intranas Vasopressin	365	1.005	156	1.65	42.68	231	136
9	6 hr intranas Vasopressin	1405	1.012	186	1.652	41.76	498	138

TABLE II—PATIENT H N

Date Dec, 1927	Medication	Urinary Output cc	Sp Gr	NaCl		Protein Intake gms per day	Nitrogen con urine mgs/100cc	Wt of Pt lbs
				Con Urine mgs/100cc	Intake gms per day			
12	None	8200	1.002	44	2.064	44.77	107	126
13	6 hr Hypo Vasopressin	3380	1.004	50	2.289	46.84	387	126
14	None	5470	1.004	50	2.289	46.84	167	125
15	6 hr Hypo Oxytocin	6310	1.003	60	2.496	47.71	155	124
16	None	6500	1.002	60	2.289	46.84	168	124
17	6 hr intranas Vasopressin	380	1.020	464	2.496	47.71	1190	124
18	None	6925	1.003	50	2.289	46.84	132	123
19	4 hr Hypo Vasopressin	2675	1.005	140	2.496	47.71	328	123
20	None	5860	1.003	60	2.289	46.84	204	122
21	6 hr intranas Pituitrin "S"	385	1.021	350	2.496	47.71	1080	123

THE VALUE OF THE ELECTROCARDIOGRAM IN ACUTE RHEUMATIC FEVER*

BY WILLIAM D. REID, M.D., AND FLORENCE L. KENWAY, M.S.

PHYSICIANS have long sought for the earliest evidence of involvement of the heart in cases of acute rheumatic fever. In some patients the clinical signs are sufficiently severe to be obvious, but in the majority of cases they are slight or absent. In recent years increased attention has been paid to the condition of the myocardium, and a number of workers have resorted to electrocardiographic examination for the detection of derangements of the heart muscle.

For the purpose of personally determining the value of the use of the electrocardiograph in acute rheumatic fever, we have taken repeated electrocardiograms on a series of patients all with acute rheumatic fever in the wards of the Boston City Hospital.

ELECTROCARDIOGRAMS

A total of 281 curves were taken on 26 rheumatic fever patients. In accordance with the suggestion of Cohn and Swift¹, we examined our electrocardiograms with reference to the three types of changes which these investigators found in records taken on patients with rheumatic fever. These changes are:

- (1) Increase in the auriculo-ventricular conduction time
- (2) Alteration in the ventricular complex
- (3) Various irregularities in cardiac rhythm

Following this suggestion, we examined our electrocardiograms with reference to these changes. In taking the tracings, the string was of course standardized and the patient's resistance was in each case within normal limits, so it is fair to state that the minute changes found were not due to mechanical error.

(1) Out of the 26 cases studied, prolongation of the P-R interval beyond 0.21 second was found in eleven cases one or more times (42.6%) with a total of 60 times in 281 curves. One case showed a conduction time varying from 0.21 to 0.40 second in nineteen consecutive electrocardiograms. In the other cases, the change was more transient.

Cohn and Swift¹ suggest that there is a normal conduction time for each individual and that any change of 0.02 second or more is significant. Of the fifteen cases who did not show partial block with a conduction time greater than 0.21 second, thirteen showed variations of from 0.02 to 0.08 second in different curves. This gives a total of 92.5% who showed prolongation of the auriculo-ventricular conduction time beyond the normal for the individual.

*From the Evans Memorial.

Dropped ventricular beats were found in two cases (5 curves). Only four of all twenty-four patients (excluding two auricular fibrillation cases) failed to show variation in the P-R interval greater than 0.02 second. These variations varied from 0.03 to 0.28 second. The two remaining cases showed auricular fibrillation throughout with the exception of one record of flutter, and therefore the P-R interval could not be measured.



FIG. 1. Male 70 years. Above April 24 Normal rhythm. P R=0.15-0.20 second. Below May 1 Partial heart block, P R=0.24-0.32 sec with frequent dropped beats. Note the change in the S-T portion of the string shadow in the second record.

(2) Under normal conditions electrocardiograms maintain a fairly constant form for a given individual over long periods of time. Any marked variation from the usual contour of the curve is probably caused by alteration in the heart.

Of the twenty-six cases, twenty-one exhibited such deviation. The changes included such variations as the presence of an S wave in one

for five or six hours, while oxytocin had but slight effect

2 In two patients with diabetes insipidus vasopressin effectively controlled the thirst and

4 On the basis of these findings the anti-diuretic effect of extracts of the posterior lobe of the pituitary gland seems to be inherent in the pressor principle

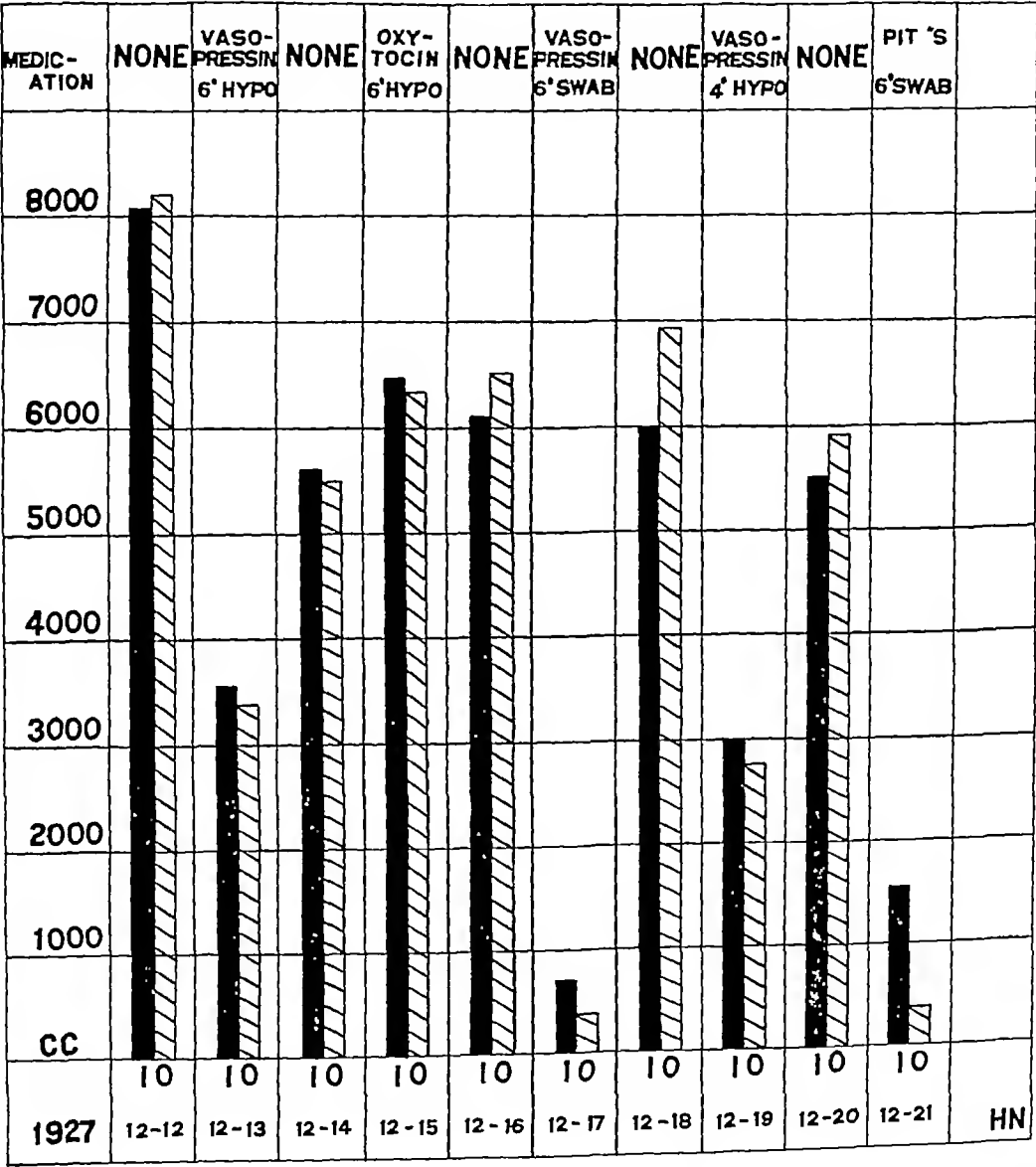


FIG VI. H. N. Solid column I represents fluid intake for 24 hours shaded column O represents urinary output for 24 hours On 12/13 0.25 cc vasopressin given every 6 hours Intramuscularly on 12/17 0.5 cc vasopressin given every 6 hours intranasally by cotton pledget on 12/19 0.5 cc vasopressin given every 4 hours Intramuscularly on 12/21 0.5 cc pituitrin S given every 6 hours by intranasal cotton pledget

polyuria, while oxytocin proved ineffective

3 Intranasal administration of vasopressin by cotton pledget proved more effective than subcutaneous administration in the two patients with diabetes insipidus

REFERENCES

1 Kamm Aldrich Grote Rowe and Bugbee J Am Chem Soc Feb 1928

2 Blumgart H L Arch Int Med 1922 XXIX 508

3 Pollin O Lab Manual of Biol Chem 1922 pp 167 169

4 Pollin O Lab Manual of Biol Chem 1922 pp 131 133 (D Appleton & Co N Y)

5 Weir Larson and Rowntree Arch Int Med., 1922 XXIX, 406

There was no close connection between the findings on clinical examination of the heart and those in the electrocardiogram. In eleven cases the heart appeared normal throughout, in six others with the findings of chronic heart disease, nothing indicative of fresh involvement of the heart could be detected on physical examination, four cases showed slight signs such as abnormal tachycardia, in one patient partial heart-block was detected by electrocardiogram before the development of a murmur considered due to rheumatic endocarditis in one, acute mitral endocarditis appeared, in one, acute pericarditis of moderate degree was present, and in the remaining two, one of which progressed to



FIG 3 Female 28 years. Four records lead 2 showing variation in the P-R interval with prolongation from 0.20 second to 0.40 second.

death of the patient, there was extensive cardiac damage from pericarditis and valvular lesions. As might be expected, the presence of partial heart-block was not detected on physical examination of these eleven cases save in the two in which it progressed to the dropping of ventricular beats. Then only did the irregularity in the rhythm disclose the presence of the conduction defect.

One notes such items in the records as "The electrocardiographic changes and joint signs were present three weeks before the appearance of a murmur," "Nothing new in the heart but the electrocardiogram has shown abnormalities," "There has been no reason to suspect involvement of the heart save from the electrocardiographic changes."

The ages of the twenty-six patients ranged from 12 to 55 years, the sexes were about equally divided. Neither age nor sex appeared to

have any definite relationship to the presence of electrocardiographic or physical heart findings.

In this series of cases, seventeen were affected by their first attack of rheumatic fever, five by their second, one by the fourth, and one by the fifth. In the remaining two, according to the history, this was the first recognized attack of rheumatic fever although the heart showed evidence of organic change of a chronic sort. All but one of the patients in whom the present attack was not the initial one showed signs of structural changes in the heart. The number of the attack made no essential difference in the presence of the alterations in the electrocardiogram save for the two with persistent fibrillation of the auricles which made it impossible to determine the conduction time (the P-R interval). The duration of the arthritis before admission to the hospital likewise had no bearing on the degree of change detected in the electrocardiograms.

COMPARISON WITH REPORTS BY OTHER OBSERVERS

As far as is possible, in view of the difference in method of reporting the findings noted by various observers have been combined in Table I.

It will be noted that the frequency of the findings detected is higher in the reports showing the greater number of electrocardiograms. There appears to be greater value in taking repeated tracings.

SUMMARY AND CONCLUSIONS

Two hundred and eighty-one electrocardiograms were taken on a series of twenty-six patients all with acute rheumatic fever.

These records were examined for the presence of alteration indicative of involvement of the myocardium. One or more of three such changes were detected in all.

These changes are

1. Increase in the auriculo-ventricular conduction time
2. Alteration in the ventricular complex
3. Changes in the cardiac rhythm

Repeated electrocardiograms on the same patient are necessary to detect these changes which are often transient.

An increase in the auriculo-ventricular conduction time was found in 92 per cent of the cases, in 42 per cent it was of the degree found in partial heart-block.

Change in the form of the ventricular complex was detected in 80 per cent.

Extrasystoles were found in 34 per cent.

Comparison with the reports from other laboratories shows similar findings, the higher percentages of changes being detected by those taking the greater number of electrocardiograms on each patient.

The electrocardiographic evidence of myocardial involvement is present although the patient

curve and its absence in the same individual another day, similar variations though not so marked in regard to the Q wave, variations in the relative amplitude of the Q-R-S waves, decided variations in the form of the R wave, variations in the size, extent, and direction of the T wave, and changes in the direction of the S-T portion of the string shadow. Changes in the S-T interval were found in eleven cases. This

Disregarding sinus arrhythmia, all of the twenty-six patients showed one or more of the electrocardiographic signs of cardiac involvement. At the time of discharge from the hospital, the changes had disappeared completely in fifteen cases, in eight a slight amount persisted, and in the remaining three, the new findings were still definitely present.

The accompanying electrocardiograms have

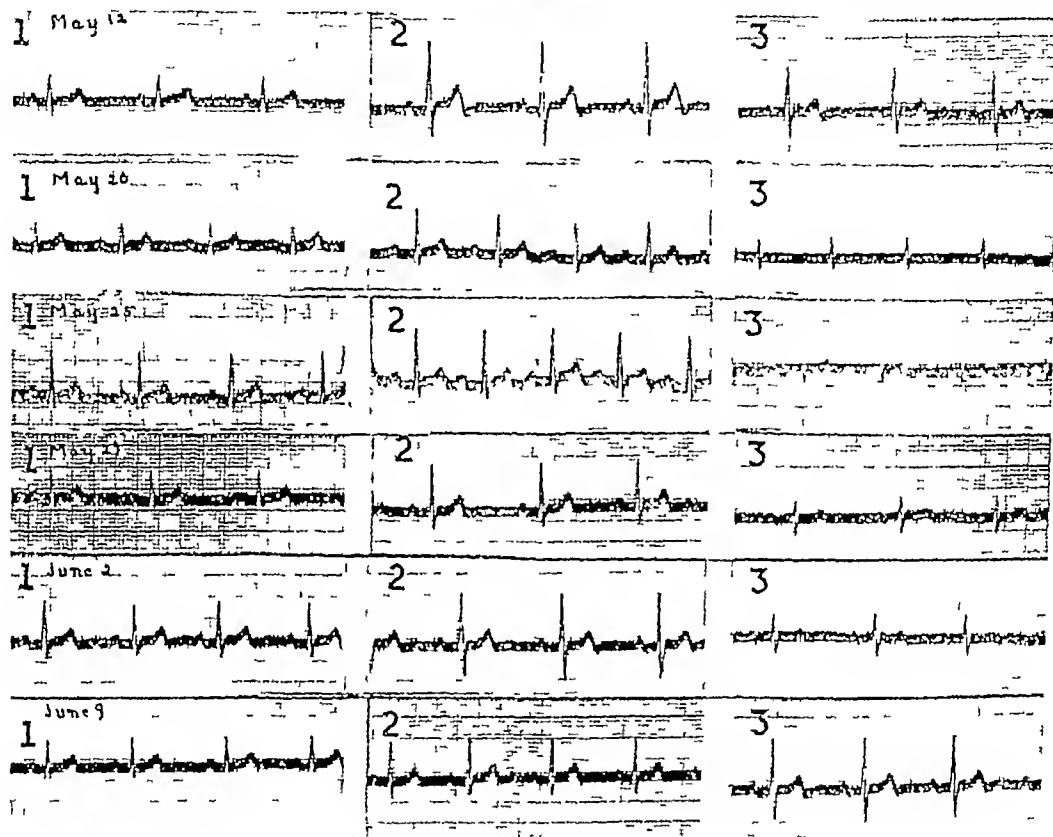


FIG. 2 Female 18 years Six records showing variation in Q-R-S-T-P-R interval varies from 0.16 to 0.24 second

alteration amounted to an absence of an isoelectric period between the end of the Q-R-S complex and the beginning of the T wave.

(3) In regard to irregularities in cardiac rhythm, the third indication of heart involvement in rheumatic fever patients, two of our cases showed auricular fibrillation with a single record of flutter in one of these, as stated above. Sino-auricular tachycardia with varying rates of 100 to 125 was found one or more times with eleven patients, sixteen curves of this rhythm being obtained from one patient. Nine patients gave evidence of premature contractions, three of ventricular origin, three auricular, and three probably nodal.

Auricular hypertrophy was found in four patients, and left axis deviation in varying degrees in six patients. The hypertrophy in these cases was probably chronic and not due to the present attack of rheumatic fever. Sinus arrhythmia was frequent.

been selected as illustrating the changes described.

CORRELATION WITH CLINICAL FINDINGS

The symptoms noted were those of rheumatic fever rather than of heart disease. The pain from the arthritis usually subsided in a few days under salicylate therapy, but the changes in the electrocardiogram were present and often progressed for from one to several weeks. This is in agreement with the conception of Swift² that the arthritic changes are of the nature of exudative phenomena, whereas those in the heart are proliferative in character. The exudative phenomena usually disappear as a result of the salicylate medication, and the patient may appear to be clinically well although the proliferative features continue and may progress. We found no relation between the duration of the joint symptoms and the degree of, or persistence of, the electrocardiographic changes.

may have become symptomatically free and nothing abnormal may be found on physical examination of the heart

The high incidence of the electrocardiographic signs adds important confirmation to the opinion of many authorities that the heart is involved though not necessarily to a degree that presents clinical signs, in all cases of acute rheumatic fever

The detection of these electrocardiographic changes is often the first and sole evidence of cardiac involvement. Their presence may be of value in the differential diagnosis between rheumatic heart disease and the acute or subacute bacterial type³, or between rheumatic arthritis and that of other causation

The finding of evidence of myocardial involvement in electrocardiograms taken in acute rheu-

matic fever is of clinical importance if the changes are marked or persistent. Their detection gives reason for continuing to treat the patient, even though he may appear clinically to have recovered

REFERENCES

- 1 Cohn A E and Swift, H. F. Electrocardiographic Evidence of Myocardial Involvement in Rheumatic Fever. *Jour Exper Med* 39:1 (Jan 1) 1924
- 2 Swift H F. Rheumatic Fever. *Amer Jour Med Sci* clxx 631 1925
- 3 Rothschild M A Sack B and Libman E. The Disturbances of the Cardiac Mechanism in Subacute Bacterial Endocarditis and Rheumatic Fever. *American Heart Jour* 2 356 April 1927
- 4 Parkinson, J Gosse A H and Gunson E B. The Heart and Its Rhythm in Acute Rheumatism. *Quarterly Jour of Med* 13 363 April 1920
- 5 Bain C W C and Hamilton C K. Electrocardiographic Changes in Rheumatic Carditis. *Lancet* London 1 607 April 1927
- 6 Bonas E P and Schwartz, S P. Some Modes of Infection in Rheumatic Fever. *American Heart Jour* 2 375 April 1927
- 7 Coombs Carey F. Rheumatic Heart Disease. Wm Wood & Co. New York. 1924

CARBOHYDRATE INDIGESTION ITS DIAGNOSIS AND TREATMENT

BY EDWARD S. EMERY, JR., M.D.

THE inability of the body, at times, to digest or tolerate starches has received considerable attention from the medical profession. This intolerance is frequently met with in children¹ and that it can disturb the whole body is recognized by pediatricists. Despite the interest shown in the question of its occurrence in adults, the condition does not seem to have been carefully studied, and there are many current misconceptions as to the symptoms it produces and as to its diagnosis. This seems to be due in no small measure to the lack of attention paid by the physicians of this country to the very excellent studies which Schmidt and Strassburger made on the subject, a number of years ago². Articles in the American literature are rare, though there was a very excellent, brief report by Jan kelson in 1922³. The condition which Schmidt and Strassburger described is distinct having characteristic symptoms and signs, which distinguish it from the general run of intestinal disturbances. Its lack of recognition is unfortunate, as patients suffering from this condition are very uncomfortable and respond quickly and completely to treatment.

The symptoms are various but for the greater part attributable to the colon. They usually are referred to the lower half of the abdomen, although occasionally there may be an associated epigastric discomfort, due possibly to some reflex effect upon the stomach.

The history is so characteristic as frequently to be diagnostic in itself. The patient first notices discomfort in the lower part of the abdomen, a feeling of distention, which may become quite marked. The abdomen becomes very tense and may even bulge perceptibly. Churning sensations are experienced, which together with rumbling and gurgling noises, vividly im-

press the patient with the fact that a large amount of gas is being driven about through the intestines in a tumultuous fashion. A burning distress is not uncommonly experienced in the pit of the stomach or lower down. These symptoms increase in severity until there is an urgent desire for defecation. The resulting movement is "explosive" in quality—a term frequently used by the patient. Temporary relief occurs, to be followed by the return of symptoms, and in the next twelve or fourteen hours there are three or four more similar bowel movements. All discomfort then disappears, and the patient is constipated for a few days, this costiveness being succeeded by a gradual return of the stools to normal. In a short time this cycle of events is repeated. The following case is typical.

CASE 1 S A O D D No 106711. A 33 year-old laborer complained of attacks of pain coming on in the left lower quadrant over a period of seven months. There were burning distress and considerable rumbling and gurgling. Relief followed the passage of a loose mushy stool explosive in type. He had failed to obtain relief by the usual methods of treatment, and the story was otherwise negative. Physical examination was essentially negative. Stool specimens were acid contained much indigested starch and fermented actively. He was given a starch-free diet and within three weeks the symptoms had entirely disappeared.

Such a cycle of clear cut symptoms strongly suggested the diagnosis. The symptoms however, are not always so sharply defined and the history may be misleading, occasionally suggesting the distress of a peptic ulcer.

CASE 2 L G (Private). A 42 year-old man, when seen for the first time gave a story of a burning epigastric pain which radiated to the sternum. It came on one-half to one hour after meals and lasted for thirty minutes. It was said to be relieved with

	Total cases	Total Electrocardiograms	P-R in excess of 0.21 sec. %	P-R increased more than 0.02 sec. %	Changes in Ventricular Complex	Change in S-T %	Some change %	Persistence	Extra-eyetolee %	Dropped beats %	Remarks
John & Swift ⁽¹⁾	37	2,591	21.6	84	46	Many	94.5	Often transient	62.1	21.6	
Swift ⁽²⁾	81		13.3	86.5	92.6		90+	Often transient			Absent or doubtful valvular dia
Rothschild, ⁽³⁾ Snacks & Libman	65				80		94	Usually transient		7.2	Heart affected in 61 out of 65 cases
Parkinson ⁽⁴⁾ Gease & Gunson	50	100	30					Often transient	20	8.0	Sino-Aur tachy 94%
Bain & Hamilton ⁽⁵⁾	50		4		12	6%	22		2.0	0	
Boas & Schwartz ⁽⁶⁾	13	50	15.4				23.5		7.7	0	
Goosbs ⁽⁷⁾	79				67				Small %		
Reid & Kenway	26	281	42.6	92.3	80.7	42.4	100	Transient in 15 cases, 57%	34.6	7.7	Not evident on examination of heart in 17 cases
Average			21.15	87.6	63.6		70.66		25.28	7.4	

TABLE I

Vacant spaces indicate data not recorded

tion of the starches which reaching the colon, ferment, and cause the symptoms. Yet this explanation does not seem to account for all the findings. There is some reason to feel that the condition may be due to the implantation of an abnormal flora, resulting in the production of foreign products causing the symptoms of irritation. There is no evidence so far as I know, on which to decide the underlying etiology.

DIAGNOSIS

The diagnosis of carbohydrate indigestion is easy in the presence of typical symptoms and fecal examination. If the symptoms are not clear-cut, but the stools show granular or gaseous, increased starch content, acid reaction and fermentation, one should not hesitate to make the diagnosis. When the symptoms are atypical and the stool findings are incomplete the diagnosis may be difficult or impossible. In diarrhea from enteritis the stool may contain an excess of starch and may ferment when incubated. In differentiating carbohydrate indigestion from an enteritis, in which starch is swept into the colon because of an inflammatory process in the small intestine, one is sometimes forced to resort to a trial-and-error method of diagnosis. If the symptoms are not relieved by treatment, one must conclude that a true fermenting condition does not exist.

Finally, one sees patients complaining of symptoms colonic in type, such as have been described elsewhere under the terms "irritable colon" but in which the stools are formed thus giving no evidence of the existence of an irritable condition. In a certain number of cases the stools will be found to be consistently acid. It would seem that these cases should be classed under the fermentative group, for the removal of starch from the diet results in a return to a normal reaction in the stools and a coincident disappearance of the symptoms. Whenever one obtains the symptoms of an irritable colon with normally formed stools the possibility of acid stools should be considered and investigated.

TREATMENT

The treatment is simple and consists in the removal of all starch from the diet. Ordinarily the diet of protein and fat need be continued only for ten days, at which time a few slices of well toasted bread may be added. If this is well borne, after three or four days the patient may be given a little cereal. Occasionally the symptoms may vary, and it is necessary to return to a starch free diet for another ten days. Usually, however, the starches can be increased fairly rapidly until a normal diet is being taken.

After enough starch has been added to make the diet more palatable, it is safer to add the 3%-10% vegetables before allowing a larger amount of the pure carbohydrates. Potatoes should be permitted last of all, as for some reason these are likely to produce a relapse and I

have seen this happen even after considerable starch has been taken for some weeks.

Under the treatment, symptoms subside rapidly and often most strikingly. Patients who have been very uncomfortable, passing three to six stools a day may, within forty-eight hours after the diet has been started get marked relief. They may even become constipated making it necessary to give large amounts of vegetables and fruits. Because of the quick response these are among the most gratifying types of patients to treat.

Jankelson⁵ states that if the condition is allowed to persist too long a state of chronic colitis will result. This will mean the treatment of a colitis after the fermentative condition has been alleviated. Personally, I have had no experience with this type of case and consequently am unable to discuss it.

It is striking, however, to see how completely relief can be obtained with apparently permanent results. This is true even in cases of long standing, such as case 3, reported here. Once the condition has been completely relieved I have known of no instance of a relapse.

SUMMARY AND CONCLUSIONS

A failure in digestion of the carbohydrates produces quite characteristic symptoms, when the condition is marked. These consist of alternating constipation and diarrhoea, associated with a great deal of distention and gurgling in the lower abdomen. When the symptoms are severe, the stools are quite striking, the essential points in their examination being the increased amount of starch, the presence of iodine-staining organisms and the tendency of the stools to ferment. Where the process is not so active, the diagnosis may be more difficult and occasionally must depend on a trial-and-error method of treatment. The differential diagnosis between a carbohydrate indigestion and a mild enteritis has been herein discussed.

The treatment consists in the complete removal of carbohydrates for a period of days, which results in complete relief of the symptoms and no tendency to relapse.

REFERENCES

- 1 Hill, L. W. Continued Fever Due to Starch Indigestion. *Med. Clin. N. Am.* 8:1583 (Mar.) 1915.
- 2 Schmidt and Strassburger. Experimentelle und klinische Untersuchungen über Function und Prüfung des Darmes. *Deutsch. Archiv f. Klin. Med.* 68:570, 1901.
Idem. Die Fehler des Saugföschens und ihr Vermeidbarkeit. *Münch. Med. Wchnschr.* 48:22, 1901.
Idem. Die Faeces des Menschen. Berlin 1903. Verlag von August Hirschwald, pp. 160, 165.
- 3 Jankelson, I. R. Chronic Fermentative Indigestion. *Bost. Med. and Surg. Journ.* 196:59¹, 1912.
- 4 Schmidt and Strassburger. *Die Faeces des Menschen* p. 170.
- 5 Emery, Jr. E. S. *The Med. Clin. of N. Am.* 1:765 (May) 1925.
- 6 Jankelson, I. R. *Loc. cit.*

food and soda. Physical examination was negative. Although the original story suggested an ulcer, more careful investigation of the symptoms showed it to be somewhat atypical. An X-ray examination of the stomach was negative. Three stools specimens were acid and contained an excessive amount of starch. With a starch-free diet the symptoms disappeared completely and have not recurred for two years.

Another example of this kind is that of CASE 3 P J S, O D D No 98626 a man of 47 who for six years had been troubled with gas coming on three to four hours after eating and severe enough to waken him at two and three in the morning. He obtained only partial relief with food and soda. He was first seen by the House Officer, who made a diagnosis of peptic ulcer. After an X-ray examination of the stomach was reported as negative the diagnosis was changed to that of gastric neurosis. As the usual dietary and therapeutic measures failed to relieve him, he was sent to me. On October 8th he brought in a typical fermenting stool and he was put on a starch-free diet. On October 17th he was feeling better, but had begun to be constipated, although previously he had been troubled with frequent irritating movements. By November 14th, he was entirely free from symptoms. In answer to a follow-up note he reported four years later, that he was permanently relieved of his gastrointestinal symptoms.

The burning distress complained of by the last two patients has been met with in several individuals, who were later shown to have carbohydrate fermentation. Patients having this symptom are likely to complain of an intense burning sensation, recurring time and again in the same place. Another symptom suggestive of a fermentative condition is gaseous distension. Distension may be noted in all gastro-intestinal disturbances, and the complaint of gas is frequent. But on careful questioning one is often able to distinguish between epigastric bloating, causing a desire to belch, and lower abdominal distension with eructation.

CASE 4 Patient E P, (Private) a 32-year-old male, was first seen by the House Officer, who obtained the following history. For ten months the patient had had pain in the epigastrium and the back usually one hour after breakfast or dinner. He had not received relief from alkaline powders. He was bothered with much gas, his abdomen would swell at times and his bowels were constipated. Emetics relieved the pain. A diagnosis of gastric neurosis was made the patient was put on a bland diet but, as he did not improve, I was asked to see him. Questioning brought out the fact that the 'swelling' of the abdomen occurred in the lower half and was accompanied by borborygmus to a marked degree. A bowel movement at these times gave immediate and complete relief. A stool showed a typical fermentative condition.

The true nature of this case had been missed because those who had previously seen the man had not bothered to investigate thoroughly the story of "gas" and "distention", or because they did not realize its possible importance.

STOOLS

A markedly fermenting stool is usually of a deep tan to a yellow color. It is mushy in consistency, and although not holding its shape is quite tenacious and appears sticky. Stirring

is likely to cause a crackling sound, whether due to its mucous content or the escape of gas bubbles is not clear. The presence of gas is always evident and the little bubbles make it appear like rising dough. The odor is often likened to that of rancid butter, and is thought to be due to the presence of organic acids, chiefly butyric. The reaction is strongly acid to litmus.

Microscopically the stool may not appear abnormal except for its starch content, as brought out by the addition of iodine (Lugol's solution). A normal stool, strictly speaking, should show no starch. The fermenting stool shows a definite starch content. Most frequently the potato cells stain deeply blue because of the starch still in them. In addition there are isolated bits of starch scattered throughout the stool. Various kinds of graniferous bodies are visible, most frequently those known as clostridia, which resemble yeast cells in form, also threads of a leptothrix character. These organisms take a blue stain with iodine.

It is important to test the stools for acidity after incubation, for gas formation may be due to putrefaction of proteins. In the latter case the stool becomes alkaline. It is also important to incubate the stool when freshly passed, for, as Schmidt has shown, the fermentation of starches occurs early, to be superseded by putrefaction of the protein contents. If a stool is allowed to stand too long, it is possible for this change to take place before it is tested and the diagnostic value of the test will be lost.

The above applies to stools with marked fermentation. All cases do not have such positive findings, and one or more of the findings may be absent in a particular case. The stool may be firmer in consistency, of a more natural color, and the acid odor may not be so easily noticed, but the reaction is acid, and the starch is present. With a formed stool and only a slight amount of acid and a moderate amount of starch, it is not always easy to decide whether one is dealing with a true fermentative condition or not. In these cases it can be solved only by a therapeutic test, a trial and error form of treatment. This I will discuss later. Whenever a stool is suspected of fermenting it should be tested in a fermenting tube as described by Schmidt and Strassburger.

It has been my experience that the presence of graniferous organisms is the safest finding on which to make a diagnosis. If present, they are practically diagnostic, if absent, however, they do not rule out fermentation. In the latter event, one has to weigh the other signs and in some cases to use a trial and-error method of diagnosis.

ETIOLOGY

The symptoms seem without doubt to be due to fermentation of starches in the colon, causing an abnormal production of gas and an acid stool. Schmidt believed it was due to a catarrh of the small intestine, resulting in a deficient absorp-

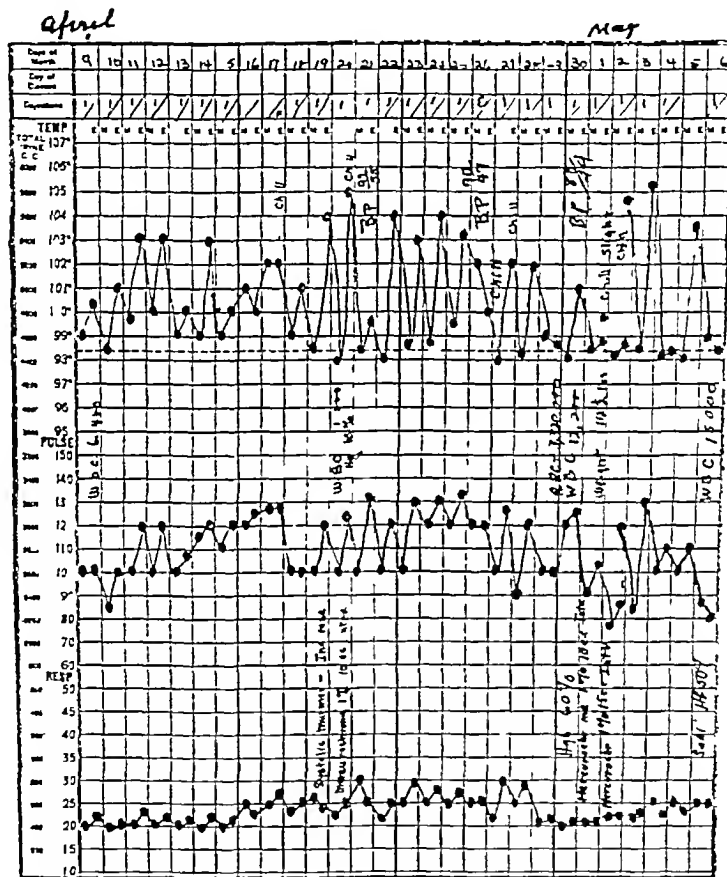
from a 24 hour growth on a hydrocele agar slant was made in salt solution. It was then heated to 56° for an hour. Equal volumes of suspension and of immune serum dilutions were made and placed at a temperature of 56° for 18 hours. Agglutination took place up to dilutions of 1:100. Control showed no agglutination.

Precipitins. A watery extract of the organism gave a precipitin ring up to dilutions of 1:400 with anti-gonococcus serum. Horse serum controls showed no ring.

As human blood is known to be an unsuitable medium for the growth and multiplication of the

Zinsser has clearly pointed out that "in cases of so-called chronic septicemia, in which bacteria may be again isolated by blood culture from the circulation, it is more than likely that the organisms are constantly present, not because they multiply or maintain themselves within the circulation, but rather because they are being continuously discharged into the blood from an established focus in the tissues, as for instance, a heart valve. The natural resistance of the phagocytes against the invasion of the blood stream must be considered as an important factor, and when the bacteria overcomes this

I



gonococcus, this may explain, to some extent the rarity of a positive blood culture in suspected cases. Old valvular scars and deformities predispose to infection of the heart in any case of septicemia, and should be considered in arriving at a prognosis. It must also be borne in mind that a mild infection of the endocardium may produce edema or even a slight amount of damage to a valve, which may be cleared up in the process of repair without resulting in a destructive or permanent lesion. This would explain the presence of a transitory systolic murmur during the height of the infection and its absence during convalescence.

defence, the death of the patient results." This opinion explains the possibility of recovery in cases having a single focus which is not embolic, and where the individual has a good resistance, and the gonococcus a low virulence.

CASE REPORT

An unmarried white man, chauffeur age 20 years, was admitted to the Third Medical Service of the Boston City Hospital on February 12 1927.

Chief Complaints. Urethral discharge. Sore throat. Generalized joint pains. Pustular rash on neck, arms and legs.

Family History. Father mother and five sisters living and well.

Past History. Measles and mumps in infancy. In

GONOCOCCUS SEPTICEMIA RECOVERY WITHOUT A CARDIAC COMPLICATION REPORT OF A CASE

BY THOMAS J O'BRIEN, M.D., AND EVERT A. BANCKER, JR., M.D.

THE presence of the gonococcus in the blood stream is an unusual condition almost always resulting fatally. W. S. Thayer and his collaborators have studied the subject thoroughly, especially reviewing the cardiac complications as shown at autopsy. Some thirty odd cases were found in histories of post-mortems done at the Johns Hopkins Hospital, and about the same number of cases were found in medical literature. All of these fatal cases had ulcerative or vegetative endocarditis associated with gonorrheal infection.

We find no report of a case wherein a patient with a gonorrheal septicemia recovered, without presenting evidence of a cardiac lesion.

Thayer mentions a few cases reported as having recovered from gonorrheal septicemia but all of these had resultant cardiac lesions, as follows. The case of Silverstrim, being that of a man 29 years old, who acquired gonorrhea one month before entry. He was treated by injection of wine. The gonococcus was cultivated from the blood stream and from urethral discharge. The patient recovered, and nine months later showed evidence of chronic mitral disease with systolic and presystolic murmur.

The case of Withington was that of a man 26 years old who acquired gonorrhea, and two weeks later, measles. A blood culture was positive for the gonococcus. This patient recovered in three weeks but had a systolic murmur persisting at the second left interspace although the heart was normal in size.

Dieulafoy's case was that of a man of 23, with a positive blood culture. A mitral systolic murmur appeared. Later broncho pneumonia complicated the case, but after rest and treatment by gonorrheal vaccine, the patient recovered, evidence, however, of the mitral lesion remained.

Marfan et Debie reported a case of a girl ten and a half years old admitted for pelvic peritonitis, but with a blood culture positive for the gonococcus. The heart was enlarged and a rough systolic murmur appeared at the apex and was transmitted to the axilla. Five days later a pericardial friction sound was heard. She was treated by gonococcus vaccine and by anti-meningococcus serum, and recovered in three weeks, although persistent signs of mitral insufficiency and adherent pericardium remained.

Tapie and Riser reported a case with recovery, but did not mention the cardiac condition, so we are at a loss to properly classify it. A gram negative diplococcus was isolated from the blood and at first these observers thought that this was the meningococcus intracellularis of

Weischelbaum, which closely resembles and must be differentiated from the gonococcus.

Gonrvich did much work on the subject of endocarditis found in gonorrhea cases, and emphasized the frequency with which systolic murmurs were heard at the apex of the heart during the height of the disease, but disappeared with the recovery of the patient from the local infection. Such a systolic murmur was heard in our case, and this souffle disappeared as the patient improved, leaving no evidence of an organic or even a functional condition during convalescence.

As the treatment of a urethritis is usually an office or out-patient procedure, and the cardiac condition is not studied before, during, or after the treatment, we have no evidence of the frequency of heart complications in these cases. Blood cultures are seldom taken unless the patient is confined to bed and there are clinical symptoms of septicemia. We now know that gonorrheal infections are not necessarily local, spreading by direct extension only, but that the blood stream may be invaded and a general septicemia follow. The variations in virulence of the many strains of the gonococci may explain why there is such a difference in the complications of this disease from arthritis to the several kinds of cardiac inflammations. We feel that all such complications are evidences of a general septicemia, of varying intensities, even if the blood culture fails to reveal the presence of the gonococcus.

Methods. The organism was first isolated from a routine blood culture of 10 cc of blood in 100 cc of beef infusion broth. After 48 hours of incubation some hemolysis was apparent macroscopically. A smear stained by Gram's method showed many Gram negative diplococci in the polymorphonuclear cells of the blood. Transplants were made to various solid media but growth was obtained only on human blood agar and on 15% hydrocele agar. No growth was apparent until 48 hours of incubation.

Morphology. The colonies on solid media were round, smooth, raised and quite translucent. Smears showed Gram negative, biscuit-shaped diplococci which varied considerably in size.

Fermentation. The organism would not grow well on liquid media, so 15% hydrocele agar was made up, containing 1% of the various sugars and Andrade's indicator. Glucose was constantly fermented and maltose never.

Agglutination. A suspension of the organisms

*We are greatly indebted to the pathological department of the Boston City Hospital for the details of the method used in the detection of the gonococcus in the blood stream.

tions of stock antigonococcus serum were given at first, with disappointing results. Stock and antigenous vaccines were administered later without any perceptible change in the patient's condition.

Lévy advised the use of arsenic for the treatment of systemic conditions due to gonorrhea and cacodylate of sodium was given intravenously daily for many days in doses of 7½ grains without noticeable improvement other than the clearing up of the skin lesions.

Pulido recommended mercury for gonorrheal infections other than urethral and 15cc of a 1% solution of mercurochrome were given intravenously for a week, with no effect other than producing a chill and rise of temperature after each treatment. No symptoms of mercurialism or of nephritis followed the use of mercury.

The patient showed marked improvement as the urethral discharge disappeared and regained strength, weight and color rapidly during the latter part of May and June. He weighed 132 pounds without clothing was up and around the ward and ready for discharge on June 15th, but was held at the request of the police on account of some violation of a probation rule. He stole clothing and eloped June 22, 1927.

The various methods of treatment were disappointing as there was no marked improve-

ment until the urethritis was cured. Whether a prostatectomy and vesiculotomy would have hastened the recovery is a debatable question. The surgeons agreed that the patient was too weak for an operation at the time of the consultation. The removal of the focus is comparable to that of diseased tonsils in theory at least. We feel that as there was no focus elsewhere, and the heart was not involved, the youthful age and wonderful resistance of the patient won the fight, when the urethritis was cured rather than the medication.

BIBLIOGRAPHY

- Thayer W S Johns Hopkins Hosp Bull., Oct. 1927 xxxiii, p 31
Silverstrini P Crit. di clin. med. Firenze 1903 iv p 380
Withington C F Bos. M. & S. Jour. 1904 cli. 99
Dieulafoy G Intern. Clin. Phil. 1900 19. III 5870
Marfan et Debre Cf. Sago who gives an incomplete reference by a full quotation.
Gourvich Russ. Arch. patol. Klin. med. i bakteriol. St. Petersburg 1897 III 370
Tarple e Riser Bul. et mem. Soc. Med. d. hôp. de Par. 1922 46 263
Lévy Weissmann Jour. d'urolog. 1921 VII 93
Pulido Martin A Siglo med. 1921 LXVIII, 93 675
Zinsser Hans Infection and Resistance p 5 \ X 1923

THE TREATMENT OF INTERNAL HEMORRHOIDS WITH QUININE AND UREA HYDROCHLORIDE*

BY WILLIAM A. ROLFE, M.D.

THE treatment of hemorrhoids by injection is not new, having been in use for many years in this country and Europe. Of the various drugs and chemicals employed for this purpose solutions of carbolic acid in varying strengths seem to have been the most common.

From the fact that this method of treatment has been practiced very largely by irregulars who, as a class, are not educated in the pathology of rectal diseases, the injection treatment has fallen somewhat into disrepute by reason of unfavorable results and considerable prejudice attaches to what in reality has been proved to be a valuable therapeutic procedure in competent hands.

The use of quinine and urea hydrochloride solution in the injection treatment of internal hemorrhoids was originated in this country by Terrell¹ of Richmond, Va., who up to the year 1925, reported the treatment of 3000 cases with uniformly good results.

This form of treatment is painless and has the distinct advantage of being ambulatory rendering it particularly well adapted for use in outpatient clinics where large numbers of hemorrhoid cases are seen. As most of these patients belong to the working class and can ill afford the time to undergo operative treatment it will at once be apparent that any other method which is as efficacious as surgery should be the one to be chosen.

In the rectal clinic of the Boston Dispensary

From the Rectal Clinic, Boston Dispensary

where a great many hemorrhoid cases are seen in the course of a year the treatment by injection of quinine and urea solution has been in use for over 12 years a period of time long enough to afford exceptional opportunity to observe and evaluate its worth. The number of cases thus treated during this time run into the hundreds and the results have shown it to be an efficient and reliable method.

While it must be admitted that this form of therapy has its limitations it has been found that for simple uncomplicated hemorrhoids, which are the most common it has given satisfactory results with a very high percentage of cures. Care must be exercised in the selection of cases, as there are certain types of hemorrhoids which should not be subjected to this treatment. It should not be employed in strangulated, sloughing or external hemorrhoids, or in cases having sphincteric spasm this last usually denoting some infective process in the ano-rectal region. Obviously if cases are seen with some co-existent pathologic lesion which demands surgical measures hemorrhoidectomy should be done at the time of operation. However for the great number of patients who visit clinics for the relief of bleeding and protrusion where examination shows that only simple uncomplicated hemorrhoids are present, the use of quinine and urea injections will be found safe and efficient.

Recurrences have been observed in a small number of cases, usually from one to three years

fluenza and pneumonia ten years ago Cervical abscess incised at 5

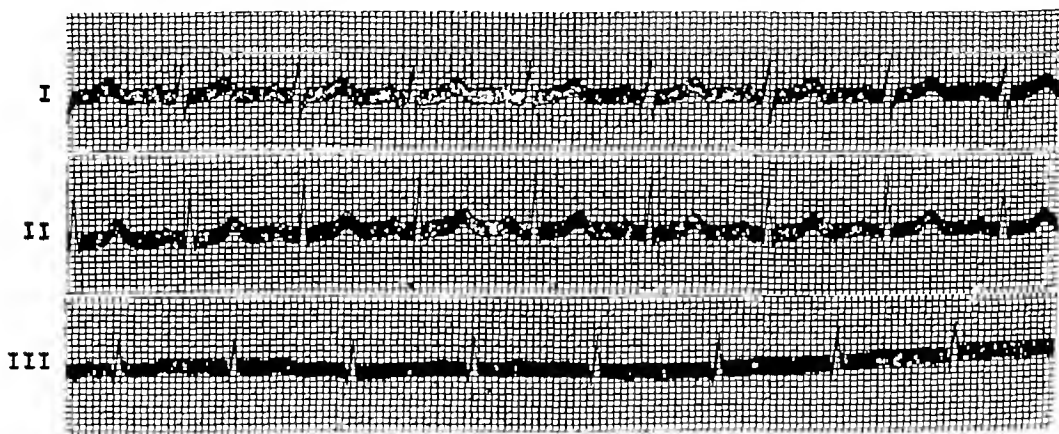
Habits Tobacco to excess Alcohol occasionally
Present Illness Contracted gonorrhea three months ago and had had no treatment Denied luetic or previous gonorrheal infection by name and symptoms Painful joints had bothered him for about a month, but had recently become worse As he was unable to work, he came to the hospital for treatment Normal weight 156 pounds

Physical Examination Fairly well developed and nourished Good mentality Pale Weak Height 5 ft. 7½ in Weight 150 pounds Temperature 98.6, pulse 88, respiration 18 blood pressure 95/70 Eyes reacted normally to light and distance Tongue protruded in medium line, slight white coat no tremor Teeth pyorrheal, in poor condition Nothing abnormal found in ears and nose Tonsils not enlarged nor cryptic No exudate Pharynx injected Small lymph nodes were palpable at both posterior cervical triangles Lungs and abdomen negative Heart area normal, sounds of good quality, rate 88 no adventitious sounds normal rhythm pulses equal

Many chills occurred during the illness and the patient was stuporous most of the time He lost weight rapidly, at one time weighing but 112½ pounds The painful joints and the rash gradually improved so that he was permitted to sit in a chair wrapped in blankets for a few minutes daily at the end of the fourth month Seven weeks after admission, a faint systolic murmur appeared along the left border of the sternum, but this was not transmitted and the pulmonic second sound was not accentuated There was no cyanosis, no pre-cordial pain, dyspnea or edema, and the heart's area was not enlarged This systolic murmur persisted for about two weeks and then disappeared and did not re-appear

At first the patient was not co-operative and refused all treatment. Later he submitted to local irrigations which were given under the direction of the urologists, but at times he would refuse this treatment for a week or so Once he became despondent and showed suicidal tendencies A second consultation was held with the urologist and a prostatectomy and vesiculotomy were advised when the patient was thought to have gained enough strength

II



Normal Sinus Rhythm, rate 80

P - R = .20 sec.

Q R S = .08 sec.

? Abnormally Low Amplitude, 7 mm.

and of good quality, no deficit. Extremities knee jerks present and equal no cyanosis, clonus or Babinski Slight edema and tenderness at the base of the right thumb Calves of both legs tender All joints painful on motion Rash on neck chest, arms and legs suggest an early furunculosis as it consists of numerous pustules of small size Urethral discharge was profuse

Laboratory Findings White count 7000 Red counts 3,500,000 Hemoglobin 60% Widal negative Wassermann and Kahn tests negative Non protein nitrogen 40.5 mgm Blood culture showed no growth No malaria plasmodia Urethral smear positive for the presence of the gonococcus Urine cloudy sp gr 1017 albumen a trace sugar absent sediment much pus no casts

Clinical Course Two days after admission the patient had a distinct rigor and the temperature rose to 104 the pulse to 110 The following morning the temperature was 97 the pulse 65 This septic temperature and pulse continued for four months varying from 97 in the morning to 104 or 105 in the afternoon The pulse varied from around 70 to 120 daily A section of the patient's chart from April 9th to May 6th shows these variations

to withstand the operation The hemoglobin was 50% and the red count 3,100,000 at this time Biopsies were done at two different times, removing pustules found on the skin but reports showed chronic inflammatory tissue, no gonococci being seen The white counts varied from 7000 to 22,000 Repeated Wassermann and Kahn tests were negative Blood cultures showed the presence of the gonococcus in March, April and part of May, while those taken the latter part of May and June were always negative Urethral smears were positive in February, March and April but were negative in May and June Repeated X Rays of the heart taken at seven feet showed the heart area to be normal An electrocardiogram was negative

Dr Harold W Dana kindly took a polygraph tracing which showed the carotid radial and jugular pulses to be normal Examination of the heart with the patient sitting, lying and after exercise showed nothing abnormal

Treatment Daily massage of the prostate and seminal vesicles with irrigations of permanganate of potash solution or neo-silvol as directed by the urologist, were given except on the occasions when the patient refused treatment. Intravenous injection

ductions of pictures and 20,000 books on its peculiar fields in the arts, a special collection is being made of 20,000 photographs of illuminated manuscripts which, when completed and accessible, will supply many side lights on mediæval medical customs. Furthermore, the Library has added a general card-catalogue, putting subjects into one alphabet with artists, etc.

Each of these libraries is very willing to give aid by mail, but, it seems to me, owing to dissimilar methods of approach, the medical researcher must as yet dig out from their mines of material the ore he needs. These libraries

evidently have a keen spirit of helpfulness but cannot be expected to realize what a wealth of material they have for medical illustration and history.

REFERENCES

- 1 The Witt Reference Library of Pictures by C. C. Smith. World Today (London) Oct. 1927. pages 363.
- 2 The Frick Art Reference Library by Bernard Teevam. International Studio 1925 82 166-170.
- 3 Catalogue of Painters and Draughtsmen represented in the Library of Reproductions of Pictures and Drawings formed by Robert and Mary Witt. London privately printed, 1920.
- 4 Supplement to the Catalogue of Painters and Draughtsmen represented in the Library of reproductions of pictures and drawings formed by Sir Robert and Lady Witt. London privately printed 1926.

*In the Fogg Art Museum Cambridge Mass.

THE DOCTOR LOOKS AT CULTURE*

BY JOSF H COLLINS, M.D.

THERE are many reasons why a youth studies medicine, chooses it in preference to any other profession, but whatever incentives he has, success is his goal, not only success measured by professional reputation and material prosperity, but by self-realization.

Two elements facilitate self-realization taking thought and gaining culture. Familiarity with the intellectual activity of the past and present and reflection upon its bearing on our welfare, conduct and lives constitute culture.

It should be part of education, but in reality the relationship between them is distant. A man may be cultured and have small education. Walt Whitman for instance, or may be greatly educated but not necessarily cultured, Robert Burton for example.

Education is to the building of a house what culture is to its decoration. Vocational education equips the mind with the essentials of the trade or profession, culture adorns it with the humanities. Physicians should study living languages and the sciences for many reasons and steep themselves in the humanities for two: to fill their own reservoir of pleasure and to generate energy in their work. By studying physiology and pathology they will gain self-approval, by studying human nature they will gain the approval of others. The sort of culture they need is best obtained by familiarity with great poets, philosophers, biographers, thinkers, musicians and art.

It is agreed that the welfare of the soul is enhanced by culture, but that it enhances professional efficiency is not so well recognized.

Culture is obtainable everywhere, in galleries, museums and libraries by preference. Neither Benjamin Franklin nor Thomas Jefferson had been to college, William Osler and William James had not either, yet they were men of great culture. If colleges should teach students to think, college might be the best place to attain culture.

I am convinced that the medical student who knows the great classics of the past is better equipped to practice medicine than he who has Quain, Osler and Howell at his finger tips. Anyone who knows anything thoroughly be it history or literature music or sculpture may achieve a reputation for culture. Arpad Gerster, Walter James, Pearce Bailey and Frank Merea were ideal men of culture.

Culture has a reputation for creating an elite by giving to some advantages that others have not. Anyone can attain it so there is no favoritism. It is said to engender idleness by unfitting man for ordinary labor. John Cotton Dana is the living example that it does not. It has been objected that by its dealing with the past it hampers progress. Thrilling prowess and civic virtues are never out of date and ancient literature is filled with such examples. And the creation of an elite should be desired and striven for.

Were there any unanimity of opinion about what the duties and even the meaning of medicine are, culture might be given a larger place in the profession. Without basic scientific knowledge it is of little use, but all science is just as ineffectual. Man is the problem to understand when the doctor is confronted with illness and science does not consider man but facts. To draw logical inferences is one of the physician's duties and he cannot do so if he bases himself only on scientific knowledge. A physician may be successful though uncultured, but the majority of immortal physicians were students of matters beyond professional science. If children could develop the habit of reading and be taught to like it, they would become men of culture as naturally as they become anything they choose to be.

Some physicians of the past have left literary remains that are not to be disdained. Cadwalader Colden, Benjamin Rush, Samuel Bard, Elihu Smith, David Hossack, John W. Francis, William Gibson, James Jackson, Daniel Drake, Elshia Bartlett, Samuel Gross, Oliver Wendell

*An Abstract of an Address delivered before a meeting of Boston doctors at the Tavern Club January, 1924.

after injection. These have been due, almost invariably, to the fact that an insufficient number of injections had been given. As bleeding usually ceases after the first injection, this symptomatic cure is misleading and treatment should be repeated until examination shows that the hemorrhoids have disappeared. This takes on an average of from 6 to 8 injections at intervals of 5 or 6 days.

Quinine and urea solution injected into a hemorrhoid causes a fibrinous exudate to form which, by pressure on the vessels, diminishes the blood supply of the pile, resulting in its atrophy. After the requisite number of injections have been made, the hemorrhoidal tumors will disappear completely and are replaced by fibrous tissue.

In the large series of cases which have undergone this treatment in the Boston Dispensary, no sloughing, abscess formation, hemorrhage or other complications have been observed.

Very rarely a case having an idiosyncrasy to quinine will be encountered with alarming symptoms of vomiting and collapse. The usual treatment for collapse should be given and the patient's condition will improve in a few hours. Needless to say, the injection should not be repeated.

METHOD OF USE

The patient is placed on a table in the right or left Sims position with the buttocks well over

the edge. A good headlight is a necessity. A 5% solution of quinine and urea hydrochloride, freshly made with sterile distilled water, should be drawn into a 5 c.c. glass syringe to which is attached a 25 gauge needle 4 inches long. Each hemorrhoid should be exposed with a Brinkerhoff or an Otis rectal speculum and swabbed with a 3% solution of mercurochrome, or if this be not available, with tincture of iodine, although the latter is irritating to the rectal mucosa. This preliminary sterilization is very important and should not be omitted. The needle is introduced into the centre of the hemorrhoid as high as possible and from 5 to 15 minims, depending on the size, slowly injected. The injection should always be made well above the ano-rectal line, for if introduced under the anal membrane or too near the mucocutaneous border, a very painful oedema will occur.

As the solution is acid in reaction, it will sometimes be noted that the patient will complain of a slight dull ache in the rectum. The acidity can be reduced by the addition of a drop of a saturated solution of sodium bicarbonate to the contents of the syringe.

Constipation should be corrected, preferably by the use of liquid petrolatum.

REFERENCE

- 1 Terrell, E. H. Transactions American Proctologic Society, 1925

ART REFERENCE LIBRARIES AND MEDICINE*

BY ALFRED ELA

THE intimate relations between the graphic arts and medicine need not be enlarged upon before this Club, many members of which have written upon branches of the subject, how this is handled by the medical libraries (such as the Boston Medical Library), by the medical museums (such as the Wellcome Historical Medical Museum, London), by some great hospitals (such as La Salpêtrière, Paris) and by the numerous private collectors, cannot be treated within the time assigned me. Accordingly, attention will be confined to two art reference libraries, even here omitting most of the details to be found in the printed articles herewith submitted.^{1, 2}

In London is the Witt Reference Library of Pictures¹, which now has about 300,000 reproductions of paintings and drawings, mostly obtained by dissection of books and catalogues, this being one of the few defensible instances of "Grangerizing". The arrangement of these reproductions can best be explained by sketching the growth of this library. Nearly thirty years ago, two Oxford undergraduates (one at a men's

college, the other at a women's) independently began collecting, on a large scale, photographs of paintings and all available information thereon. Becoming much interested in the growth of each other's gleanings, they finally found, as friends jokingly said, the only way to unite their separate collections was to marry. During all the subsequent years, in the intervals snatched from their successful professional, public, and artistic activities, they have accumulated the present total, each reproduction having written on its back all accessible details, from the most varied sources, regarding the picture, etc., digested data are also given as to the artists, now aggregating over 13,000. Throughout, however, the point of view has been that of the art specialist^{3, 4}, therefore, the arrangement is "by artists" classed by their schools, and this arrangement has been marvelously perfected within its scope. The cataloguing by subjects is left chiefly for the future, and thus the medical man cannot yet make such ready use of the material as can the art specialist.

In New York, modelled upon the Witt, is the Frick Art Reference Library, opened nearly four years ago². It already has 100,000 repro-

*Presented before the Boston Medical History Club, January 27, 1923.

ductions of pictures and 20,000 books on its peculiar fields in the arts, a special collection is being made of 20,000 photographs of illuminated manuscripts which, when completed and accessible, will supply many side-lights on mediæval medical customs. Furthermore, the Library has added a general card-catalogue, putting subjects into one alphabet with artists etc.

Each of these libraries is very willing to give aid by mail, but, it seems to me, owing to dissimilar methods of approach, the medical researcher must as yet dig out from their mines of material the ore he needs. These libraries

evidently have a keen spirit of helpfulness but cannot be expected to realize what a wealth of material they have for medical illustration and history.

REFERENCES

- 1 'The Witt Reference Library of Pictures' by C. C. Smith. World Today (London) Oct. 1927. page 353.
- 2 'The Frick Art Reference Library' by Bernard Teeviam. International Studio 1925. 52. 166-170.
- 3 Catalogue of Painters and Draughtsmen represented in the Library of Reproductions of Pictures and Drawings formed by Robert and Mary Witt. London privately printed, 1920.
- 4 Supplement to the Catalogue of Painters and Draughtsmen represented in the Library of reproductions of pictures and drawings formed by Sir Robert and Lady Witt. London privately printed 1926.

In the Fogg Art Museum Cambridge Mass.

THE DOCTOR LOOKS AT CULTURE*

BY JOSEPH COLLINS, M.D.

THERE are many reasons why a youth studies medicine, chooses it in preference to any other profession, but whatever incentives he has, success is his goal, not only success measured by professional reputation and material prosperity, but by self-realization.

Two elements facilitate self-realization: taking thought and gaining culture. Familiarity with the intellectual activity of the past and present and reflection upon its bearing on our welfare, conduct and lives constitute culture.

It should be part of education, but in reality the relationship between them is distant. A man may be cultured and have small education. Walt Whitman, for instance, or may be greatly educated but not necessarily cultured. Robert Burton, for example.

Education is to the building of a house; what culture is to its decoration. Vocational education equips the mind with the essentials of the trade or profession, culture adorns it with the humanities. Physicians should study living languages and the sciences for many reasons and steep themselves in the humanities for two: to fill their own reservoir of pleasure and to generate energy in their work. By studying physiology and pathology they will gain self-approval, by studying human nature they will gain the approval of others. The sort of culture they need is best obtained by familiarity with great poets, philosophers, biographers, thinkers, musicians and art.

It is agreed that the welfare of the soul is enhanced by culture, but that it enhances professional efficiency is not so well recognized.

Culture is obtainable everywhere, in galleries, museums and libraries by preference. Neither Benjamin Franklin nor Thomas Jefferson had been to college, William Osler and William James had not either, yet they were men of great culture. If colleges should teach students to think, college might be the best place to attain culture.

I am convinced that the medical student who knows the great classics of the past is better equipped to practice medicine than he who has Quain, Osler and Howell at his finger tips. Anyone who knows anything thoroughly, be it history or literature, music or sculpture, may achieve a reputation for culture. Arpad Gerster, Walter James, Pearce Bailey and Frank McCrea were ideal men of culture.

Culture has a reputation for creating an elite by giving to some advantages that others have not. Anyone can attain it, so there is no favoritism. It is said to engender idleness by unfitting man for ordinary labor. John Cotton Dana is the living example that it does not. It has been objected that by its dealing with the past it hampers progress, thrilling prowess and civic virtues are never out of date and ancient literature is filled with such examples. And the creation of an elite should be desired and striven for.

Were there any unanimity of opinion about what the duties and even the meaning of medicine are, culture might be given a larger place in the profession. Without basic scientific knowledge it is of little use, but all science is just as ineffectual. Man is the problem to understand when the doctor is confronted with illness and science does not consider man but facts. To draw logical inferences is one of the physician's duties and he cannot do so if he bases himself only on scientific knowledge. A physician may be successful though uncultured, but the majority of immortal physicians were students of matters beyond professional science. If children could develop the habit of reading, and be taught to like it, they would become men of culture as naturally as they become anything they choose to be.

Some physicians of the past have left literary remains that are not to be disdained. Cadwalader Colden, Benjamin Rush, Samuel Bard, Elhu Smith, David Hosack, John W. Francis, William Gibson, James Jackson, Daniel Drake, Elsha Bartlett, Samuel Gross, Oliver Wendell

*An Abstract of an Address delivered before a meeting of Boston doctors at the Tavern Club, January, 1926.

after injection. These have been due, almost invariably, to the fact that an insufficient number of injections had been given. As bleeding usually ceases after the first injection, this symptomatic cure is misleading and treatment should be repeated until examination shows that the hemorrhoids have disappeared. This takes on an average of from 6 to 8 injections at intervals of 5 or 6 days.

Quinine and urea solution injected into a hemorrhoid causes a fibrinous exudate to form which, by pressure on the vessels, diminishes the blood supply of the pile, resulting in its atrophy. After the requisite number of injections have been made, the hemorrhoidal tumors will disappear completely and are replaced by fibrous tissue.

In the large series of cases which have undergone this treatment in the Boston Dispensary, no sloughing, abscess formation, hemorrhage or other complications have been observed.

Very rarely a case having an idiosyncrasy to quinine will be encountered with alarming symptoms of vomiting and collapse. The usual treatment for collapse should be given and the patient's condition will improve in a few hours. Needless to say, the injection should not be repeated.

METHOD OF USE

The patient is placed on a table in the right or left Sims position with the buttocks well over

the edge. A good headlight is a necessity. A 5% solution of quinine and urea hydrochloride, freshly made with sterile distilled water, should be drawn into a 5 c.c. glass syringe to which is attached a 25 gauge needle 4 inches long. Each hemorrhoid should be exposed with a Brinkerhoff or an Otis rectal speculum and swabbed with a 3% solution of mercurochrome, or if this be not available, with tincture of iodine, although the latter is irritating to the rectal mucosa. This preliminary sterilization is very important and should not be omitted. The needle is introduced into the centre of the hemorrhoid as high as possible and from 5 to 15 mm., depending on the size, slowly injected. The injection should always be made well above the ano-rectal line, for if introduced under the anal membrane or too near the mucocutaneous border, a very painful oedema will occur.

As the solution is acid in reaction, it will sometimes be noted that the patient will complain of a slight dull ache in the rectum. The acidity can be reduced by the addition of a drop of a saturated solution of sodium bicarbonate to the contents of the syringe.

Constipation should be corrected, preferably by the use of liquid petrolatum.

REFERENCE

1 Terrell E. H. Transactions American Proctologic Society, 1923

ART REFERENCE LIBRARIES AND MEDICINE*

BY ALFRED ELA

THE intimate relations between the graphic arts and medicine need not be enlarged upon before this Club, many members of which have written upon branches of the subject, how this is handled by the medical libraries (such as the Boston Medical Library), by the medical museums (such as the Wellcome Historical Medical Museum, London), by some great hospitals (such as La Salpêtrière, Paris) and by the numerous private collectors, cannot be treated within the time assigned me. Accordingly, attention will be confined to two art reference libraries, even here omitting most of the details to be found in the printed articles herewith submitted.^{1 2}

In London is the Witt Reference Library of Pictures¹, which now has about 300,000 reproductions of paintings and drawings, mostly obtained by dissevering books and catalogues, this being one of the few defensible instances of "Grangerizing". The arrangement of these reproductions can best be explained by sketching the growth of this library. Nearly thirty years ago, two Oxford undergraduates (one at a men's

college, the other at a women's) independently began collecting, on a large scale, photographs of paintings and all available information thereon. Becoming much interested in the growth of each other's gleanings, they finally found, as friends jokingly said, the only way to unite their separate collections was to marry. During all the subsequent years, in the intervals snatched from their successful professional, public, and artistic activities, they have accumulated the present total, each reproduction having written on its back all accessible details, from the most varied sources, regarding the picture, etc., digested data are also given as to the artists, now aggregating over 13,000. Throughout, however, the point of view has been that of the art specialist⁴, therefore, the arrangement is "by artists" classed by their schools, and this arrangement has been marvelously perfected within its scope. The cataloguing by subjects is left chiefly for the future, and thus the medical man cannot yet make such ready use of the material as can the art specialist.

In New York, modelled upon the Witt, is the Frick Art Reference Library, opened nearly four years ago². It already has 100,000 repro-

*Presented before the Boston Medical History Club January 27 1923

NEW ENGLAND SURGICAL SOCIETY

REPORT OF HERNIA WORK UNDER LOCAL ANESTHESIA*

BY D C PATTERSON, M.D., F.A.C.S

THE great advantage of local anesthesia for hernia repair on poor risk patients, is obvious. It is inexcusable not to use it in cases of strangulated hernia, as many patients will be saved that could not survive the ordeal plus inhalation anesthesia.

In the average risk case, local anesthesia has several advantages over other methods. It is less dangerous. Post-operative complications, especially pulmonary, while by no means absent are less frequent and less severe. Nausea and vomiting are rare. Greater muscular relaxation is obtained and the possibility of having the patient strain or cough during the operation is at times, a real help.

Just recently, I was operating on a recurrent hernia, and after removing an indirect sac and making the repair of the wall I had the patient cough, and a small direct hernia, almost on the pubes came into view. I believe I would have missed that second sac, had the patient been asleep for it was fully an inch and a half from the first protrusion.

Where assistance is limited, an anesthetist is unnecessary, and the patient does not require the constant watching of a nurse until he awakens.

The criticisms that are most often heard against local anesthesia for hernia repair are that it takes more time, that convalescence is disagreeable, and that wound infection and recurrence are more apt to occur than in repair done under inhalation anesthesia.

It probably does take a little more time, but only a few minutes, and that is due to the more careful handling of the tissues. It would be well if more time were used for this purpose when the patient is asleep. That the other charges are not well founded, is apparent to anyone who has had much experience with local anesthesia.

The object of this study of cases, was to determine the immediate post-operative condition of the patient, and the incidence of recurrence.

The method adopted has been as follows. Patients are prepared as usual. One half hour before operation, morphine grain $\frac{1}{4}$ with atropine grain $\frac{1}{150}$ are given. For some time, I used divided doses of morphine with magnesium sulphate, but found no advantage in so doing. 1% novocain solution, freshly prepared and autoclaved for ten minutes at 110° , is injected to block the ilio hypogastric and ilio inguinal nerves. A second injection is made just over Gimbernat's ligament. Very rarely is further use of the syringe necessary. Forty C.C. of solution has proven sufficient in nearly all cases.

I have discontinued the addition of adrenalin to the novocain, as I never saw any advantage in its use. In fact, I feel that it sometimes does harm, for since discontinuing it, we have never had to give a patient any stimulation during or after the operation. I should state however that we frequently let our patients inhale aromatic spirits of ammonia. They seem to derive some satisfaction from doing so.

We make our patient as comfortable on the table as possible and do not fasten his arms tightly at his sides. Occasionally a patient is encountered, who is too restless to continue under local anesthesia with comfort. I think it is much better to give such patients a little gas-oxygen than to persist and have them excited and uncomfortable. Aseptic technique is, of course of the first importance, and eternal vigilance is the price of asepsis. We keep our patients in bed for two weeks following the operation. This rule is excepted in the case of very old patients, for obvious reasons.

After operation I believe the patient should be kept comfortable. Morphine is never withheld when needed. Water is given in quantities. The bed is raised a notch and the knees elevated. This relieves tension and is a comfortable position. Patients are usually discharged the second day after getting up.

The question of recurrence after hernia operations is an important one, and makes the problem of repair demand our sincerest efforts.

The operation is regarded lightly even by some surgeons of repute. Recently, one man told me that he always turned the hernias over to the house staff. Had he been conversant with the end-results of hernia operations, I do not believe he would regard the operation as of such little consequence.

I think most recurrences will show, on examination, some evidence of their presence within six months, but not to the patient however, for as a rule, they are unaware of its presence. Four cases in this series reported that they were entirely cured, but examination showed definite, though small recurrences.

Dr. Taylor, in a study of cases at Johns Hopkins Hospital found that, where among cases examined at the hospital, there were 84 of recurrences in indirect hernias. There were only 34 among a large number of the same type who responded by letter. The percentages of recurrence for direct hernias were 29.7 for those examined at the hospital, and only 6.3 for those reporting by letter. This is a very striking discrepancy. It is obvious therefore, that reports

Holmes and Henry Bigelow all achieved self-realization and culture

William Osler and Weir Mitchell are shining examples of the beauty of great culture in the physician's mental luggage. Anyone who is disposed to doubt that the physicians who wrote their names indelibly on the scroll of life were men devoted to the humanities has only to read Benjamin Ward Richardson's "Disciples of Esculapius" to have his doubts removed. And Charles Richet's little book "Le Savant" shows how delightful it must be to be both a great physician and a man of culture.

The student in medicine is not getting a square deal. Most of the work he has to do is dull and dreary and wholly concerned with technical acquisition. His medical education should be made attractive.

My suggestion to remedy the failure of colleges to provide students with general culture is this:

No professor shall be a member of any Medical Faculty who has not stood, or cannot stand, a verbal examination in Medical History conducted by a Committee made up of learned professional men, that is by men of learning beyond their profession. Candidates for professorships of histology, for instance, should be familiar with the life of Anthony Leeuwenhoek, for physiology should talk entertainingly and instructively of Celsus, Harvey, Joseph Priestley and Stephen Hale, for anatomy should know Mondinus, Vesalius, Fallopius, Eustachius and Sylvius thoroughly. The candidates for bacteriology should spread good knowledge of Spallanzani, Pasteur, Koch, Roux, Behring, Reed, and Ross. How an examiner with sadistic streaks would exult should the opportunity come to him to examine some professors of what was once called the Theory and Practice of Medicine as to what they knew of Brown, of Cullen, of Meade, of Radcliffe, Black, Heberden, Haller, Werlhof, Broussais, Louis and so many others! Quacks should be known also: Paracelsus and Mesmer, Perkins and Greatrakes.

A faculty made up of men who had passed such an examination could make their teachings engaging and inspiring and whet the appetites of their pupils for further historical and cultural pabulum.

When I began to devote my energies largely to Neurology, I still kept a general medical service in the hospital and several times served as examiner of candidates for the House Staff. The reputation which I shared with all neurologists, of being "more or less crazy", was enhanced, I fancy, by confining my questions in the oral examination to general education rather than technical education, questions that tested the candidate's emotional reactions. If a man told me correctly who invented the steam engine, and how he came to do it, and then in reply to further interrogation of some of the benefits that

had flowed from it told me that by means of it fat men were able to get to Coney Island in a quarter of the time it took a hundred years ago, I gave him a perfect mark, because it suggested to me that he had a sense of playfulness and a sense of humor. If he knew about the Dutchman who discovered in Java the skull of *Pithecanthropus* that was thought to be the link missing between man and monkey, but expressed some doubt of the validity of the claims that were made for it, I felt that association with him for eighteen months would be beneficial, skepticism being such a desirable possession for any physician to have.

If he had intimated that one of the reasons for being satisfied with our alleged Simian ancestry was that further investigation might reveal a far less desirable one—the snake, or the shrimp for instance, I would have implored him to join us.

The difficulty is to get at the student. He is sometimes ignorant himself of the essentials of his vocation. They are character, culture, commiseration and courage, for the physician must eventually treat the ills of the world and to do so successfully he needs all of these qualities. Not only must he develop his personality but he must help create a body of public opinion whose momentum will wipe out our self-consciousness, crush our prejudices, destroy our self-righteousness and purge us of a besetting sin: subordinating the universal to the individual.

EDITORIAL NOTE—This abstract presents some of the authors' opinions and suggestions which will appear in a chapter of a book which he is preparing.

UNITED STATES PUBLIC HEALTH SERVICE

CHRONOLOGICAL LIST OF CHANGES OF DUTIES AND STATIONS OF COMMISSIONED AND OTHER OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

FEBRUARY 29, 1928

Associate Sanitary Engineer Leonard Greenburg Directed to proceed from New Haven Conn to Bridgeport, Conn, and return, in connection with the ventilation studies being conducted by the office of industrial hygiene and sanitation. February 25 1928

Sanitary Engineer H R Crohurst Directed to proceed from Cincinnati Ohio, to Gary Indiana and return for the purpose of participating in the Lake Michigan Sanitation Congress to be held in that city March 6, 7 and 8 1928. February 27 1928

Acting Assistant Surgeon Nat K King Directed to proceed from Laredo Texas, to Roma Texas and return, for the purpose of supervising the inauguration of quarantine and immigration activities with the opening of the new bridge at Roma. February 27 1928

Assistant Surgeon General F A Carmella Directed to proceed from Washington D C to Milford, Delaware and return for the purpose of making an inspection of the new quarantine Diesel tug under construction at that place. February 28 1928

Official

H S CUMMINS Surgeon General

ly to hernial operations resolves itself into two definite points one in regard to the patient, and the other, in regard to the doctor. I feel that in regard to the patient, in the large, plethoric patient it is a good thing to use and especially in the strangled hernia, but in the highly nervous people to whom the operating room is an ordeal it isn't a good idea to use local anesthesia. I also feel that the use of morphine and scopolamine cannot be graduated according to the dose but according to the patient, whether large or not.

I think the most important thing is in regard to the post-operative complications. I think that the complications that arise, as pneumonia could be avoided if the local anesthetic were used.

We always raise up the skin first before we inject the ilio-inguinal or iliohypogastric nerve.

I think Dr. Patterson should be congratulated on the fact that he did 113 operations without an infection.

DR. W. E. HARTSHORN, New Haven. I have enjoyed very much listening to Dr. Patterson's paper on hernia. It is a most important subject.

I have found that one half of one per cent novocaine is most satisfactory in these cases and have been using this at the New Haven Hospital for some years instead of one per cent Gas or ether is used if the patient is not a good mental risk for a local anesthetic.

The routine procedure with me after ligation of the sac has been to fix it under the conjoined tendon with an interrupted suture using the long ends of the sac ligature for this purpose.

It is very important to free the sac around the internal ring before ligating it so that it will really drop back into the abdomen. I believe this has a great deal to do with successful hernia repair.

Bassini's operation is I think the most satisfactory. Special care should be exercised in placing the first suture close to the spine of the pubis in such a way as to close the lower angle of the wound completely. I use a double No. 2 chromic gut for the entire closure below the cord. Sutures should also be placed carefully where the cord emerges at the internal ring. The sutures from the conjoined tendon to Poupart's ligament must be inserted as low as possible on the ligament.

I always overlap the aponeurosis of the external oblique suturing the upper flap over the cord to Poupart's ligament.

Experimentally it is claimed that fibrous or aponeurotic tissue sutured together hold much firmer than muscle to aponeurosis. Some surgeons in hernia cases use a suture shredded from the external oblique aponeurosis where the overlapping is done.

I think it is inadvisable to remove an appendix through a hernia incision even when the caecum appears in the hernial sac. I tried it

once and had a badly infected wound with which to contend. I am afraid this may have been due to poor technique.

I have had few recurrences when I have done the Bassini operation. None that I can remember in young individuals. When they occur the patient has a neglected hernia and is usually over fifty.

I have had one left femoral vein thrombosis after doing a right hernia. The patient's age was fifty-five and he was very obese.

DR. CHARLES A. PORTER, Boston. I want to endorse Dr. Patterson's practice in his use of local anesthesia. It is my opinion that its great value in selected cases over any form of general anesthesia is not yet fully recognized and acted upon. I believe very strongly that the time will come when, at least in peripheral operations, the first question the surgeon will ask himself is cannot this be done in this case satisfactorily under local anesthesia? To be sure the technique is a little more difficult and the time consumed in the operation a little longer, but there is much to be gained in instructing the assistant, gentle manipulation of tissues, in careful hemostasis, etc. which is not necessary when the patient is anesthetized. In performing an operation for cure of hernia, I feel that the commonest error is the tying of sutures too tightly.

DR. DAVID CHEEVER, Boston. It seems as though good old general anesthesia ought to have a word said for it—I didn't come prepared to discuss this paper. I think in the fourteen years that the Peter Bent Brigham Hospital has been in existence there have been two deaths in non-strangled hernia operations, one from faulty anesthesia by an inexperienced anesthetist during the war, and the other from a needle puncture of the iliac vein in a femoral hernia. I think it is fair to say that most of the operations have been done under a general anesthetic and that gives general anesthesia a pretty good record.

Undoubtedly local anesthesia is an important adjunct to our armamentarium, but I do feel that a surgeon ought not to be obliged to use a local anesthetic to compel him to handle the tissues with delicacy, he ought to handle them that way any way.

I think that the operation under novocaine lasts at least one third to one-half or two-thirds again as long as an operation done under a general anesthetic, and as I have watched some of the cases done at our hospital, I have thought that the patients were going through a considerable ordeal. Of course, in speaking of a general anesthetic I am not speaking of ether but of one of the newer anesthetics such as gas-oxygen which we use with success and which seems so innocuous that there is no contraindication to its use.

One question I would like to ask Dr. Patterson—I noticed that he mentioned 14 cases of

on hernio plasty results are of no value, unless a careful examination of the patient is made¹

I think one of the most frequent causes for a recurrence is failure to detect the presence of a second sac. In several cases, I have found the recurrent hernia to be of a different type from that found at the first operation. This leads one to think that the second sac might have been present even at the time of the first operation. That this is a reasonable supposition, is supported by the fact that the second operation is, in a majority of cases, successful. However, this latter may be the result of a more careful repair at the re-operation.

Lipomas emerging through the internal ring, can act as sort of a shoehorn for a hernial descent. They should be dissected free and removed. Frequently, the internal ring is enlarged, admitting at times, two fingers. I always made a repair of this defect.

Infection, post operative vomiting, and coughing all play their part in the production of recurrences. The two last named factors will be a lessened danger under local anesthesia.

There were

TABLE I

112 operations in 100 patients
12 cases were bilateral 7 of them done at one sitting 5 at two sittings 5 to 7 days apart.
Ages ranged from 16 to 86 years
99 anesthetics were entirely satisfactory
1 patient had gas while appendix was removed
2 patients had gas to reduce intestines
1 patient had gas for operation on sigmoid
2 patients had gas for operations on undescended testicles
34 patients had no morphia following operation
35 patients had 1 dose of morphia following operation
17 patients had 2 doses of morphia following operation
19 patients had 3 or more doses of morphia following operation
8 patients had nausea and vomiting None for more than a day
16 patients were catheterized for from 1 to 4 days
5 patients had ice bags to testicles, none for more than a week. Low incidence of swelling was surprising
0 patients had infected wounds
1 patient developed phlebitis, after he had left the hospital. He had varicose veins
3 patients had bronchopneumonia
11 patients had coughs that required treatment
Nearly all patients had an elevation of temperature for one to three days from 100 to 101°
1 patient died age 76 years. Had strangulation ten days. Gut had ulcerated into sac. Stood operation well. Died second day
1 patient died aged 64 years. Strangulated four days. Developed pneumonia on the sixth day
Average stay in hospital 16½ days following operation. Only 3 remained over 20 days and they were treated for other diseases

TYPES OF HERNIA

Indirect Ing	Direct Ing	Combined Sacs
R 29 L 25	R 17 L 11	R 18 L 8
Femoral	Umbilical	
2	2	

Strangulated	Inguinal	Femoral	Umbilical
11	8	1	2
Recurrent Ing	Sliding		Lipomas
5	4		17
Undescended Testicles	Varicosities		Ing ring repair
3	3		16
	Hydrocele		
	1		

TABLE II

The total number of repairs examined	87
8 found to have recurrences	9 2%
Recurrence for inguinal hernia	9 6%
42 cases of indirect hernia examined	
2 recurrences found	4 8%
23 cases of direct hernia examined	
3 found to have recurrences	13 %
18 cases combined sacs examined	
3 recurrences were found	16 5%

Four of these recurrences were so small that the patients were not aware of their presence. Unless a careful examination had been made, they would have been classed as cures.

Another recurrence was in a patient with a strangulation of over a day's duration. He had a severe cardiac lesion so that repair was not as thorough as it otherwise would have been.

REFERENCE

1 Taylor Adrian S. Annals of Surgery September 1920

DISCUSSION

DR R H MILLER, Boston. I think it is a very important and proper thing that the attention of any group of surgeons should be called to the advantages of local anaesthesia every hour of the day. I am perfectly sure that all of us think too little of local anesthesia and are too careless in advising general anaesthesia, and in a large series of cases of general anesthesia, we lose a few which we otherwise should not. I have recently been shocked at seeing four robust, healthy men over 50 die following a general anesthetic, and although those cases were not hernias, but abdominal operations, I know perfectly well that each one of those cases could have been done under novocaine and morphine and each one could have recovered, and each one of us when planning an operation on a man over 50 who is over-weight should stop and ask himself whether he should use a general anesthetic or not and ask himself about the possibility of a pneumonia. If we do that, we will save a number of patients who otherwise would have died under a general anesthetic.

I would like to ask Dr Patterson whether he uses scopolamine before the operation.

DR D C PATTERSON, Bridgeport. We had used that but we found that the usual injection of morphine with atropine is as satisfactory as anything.

DR H G JARVIS, Hartford. This question of the use of a local anesthetic as confined entire-

MEDICAL PROGRESS

RECENT PROGRESS IN PHYSIOLOGY

BY PERCY G STILES, PH D

THE *Significance of Viscosity in Muscle* Here is a matter which has been little emphasized in the past but which now appears important. Attention has been directed to it through the lectures lately given in this country by A. V. Hill and particularly by his delightful book, "Living Machinery." What is meant by viscosity is, roughly speaking, the resistance which a body opposes to distortion. A perfect fluid has a minimum viscosity. A sluggishly flowing liquid like the proverbial cold molasses has much. It is a familiar fact that a body like a rather soft candle may be gradually bent whereas the attempt to bend it quickly would result in a fracture.

The viscosity of muscles limits the rapidity with which they can contract. The more swiftly they execute movements the more largely their energy is expended in overcoming their own internal resistance to a change of form and the less the margin available for external work. It follows that the most rapid movements which we can make must always be founded upon an extravagant expenditure of ammunition or fuel. They can never be very forcible. Yet the viscosity of the muscles is not altogether a handicap, it is shown to be protective also. Hill's calculations make it clear that if muscular contractions were not retarded by this property of the tissue they might have so abrupt a character as to do violence to the parts. If such rapid motion could be imparted to arms or legs dislocations or other injuries must result.

The muscles of small animals are organized to permit quick contraction. Their viscosity must be low. The short limbs can be set into swift motion without developing a damaging momentum. As there is this marked difference between the viscosity of muscles in large and small animals so there is apparently a moderate difference to be deduced when the muscles of one man are compared with those of another. A high viscosity must hinder the attainment of the best speed in running and limit the velocity which a pitcher can impart to the ball. Hence it may well be that one of the numerous adaptations secured by training consists in a reduction of this internal resistance to change of form.

A New Theory of Muscle Contraction While much has been learned about the chemical changes and the release of energy which accompany muscular movement there has remained a gap in our knowledge as to the process by which the chemical energy is transformed to tension. Two types of theory have been attractive

According to one the pull of the muscle is the result of the migration of water molecules, according to the other it is the expression of a temporary increase in surface tension at certain localities. But the great masters of the science, including Hill, have told us that neither conception will satisfy the demands of mathematical analysis.

In view of this unsatisfactory situation fresh theories must be welcomed although each requires a rigorous testing. One has been advanced by Janet Howell Clark.² It is suggested that the process in the fibers when they are activated has much in common with crystallization. The contraction of muscle fibrils is generally supposed to be the direct consequence of the liberation of acid. Mrs. Clark has shown that when an artificial system containing ammonium oleate is slightly acidified minute crystals are produced. It is shown that a similar formation of crystals in the doubly refracting bands of the living muscle might be expected to lead to a development of longitudinal stress of the observed order. Evidence favorable to the theory has been secured by x-ray photography.

The Metabolism of Nerve In comparing muscle with nerve we have been accustomed to stress the intensity of the chemical activities of the former as contrasted with the extreme economy of substance which characterizes the latter. It is entirely proper to continue to do this. The scale of the respiratory exchange and heat production on the part of nerve-trunks is exceedingly small. Only very recently has it been possible to make measurements of the processes involved. But this is now accomplished and perhaps the most interesting physiological paper of 1927 has been that by Gerard³ presenting the experimental facts.

It is demonstrated that a resting nerve consumes oxygen and gives off carbon dioxide. The ratio between the two with carbon dioxide as numerator, (the respiratory quotient) is about 0.77. When a nerve is excited by a series of shocks its intake of oxygen and output of carbon dioxide may be increased two or three fold. The ratio (0.97) between the extra quantities of carbon dioxide and oxygen in this case supports the belief that carbohydrate is being oxidized. So refined is the technique employed in this study that it enables Gerard to point out certain curious differences between the qualitative metabolism of nerve and muscle. A muscle can work in the absence of free oxygen because its energy is derived primarily from a breakdown

dilated internal inguinal ring, the ring being dilated

DR D C PATTERSON, Bridgeport Enlarged

DR CHEEVER I feel that that isn't a very significant thing to diagnose in hernia It is a very intangible thing

DR KENDALL EMERSON, Worcester It seems to me that the patient himself may sometimes be the deciding factor in what anesthetic to use In the last two hernias I did I asked the patient to decide, and each patient quoted an unfortunate experience and decided against having a local anesthetic That may be the determining factor in deciding what the choice should be

DR EDWARD R LAMPSON, Hartford Pneumonia following operation isn't always due to the anesthetic A good many of them are embolic I happen to have had two cases done under local anesthesia which were followed by lobal pneumonia I do as many cases under local as patients will allow me

DR ROYAL P WATKINS, Worcester I would like to ask the doctor how long a time elapsed after the operation before he allowed the patients to go back to work especially if they did heavy work such as lifting

DR D C PATTERSON, Bridgeport (closing) Local anesthesia is one of the really great advances in surgery

It is especially adaptable for hernia repair, and should be more generally used

Post-operative complications are lessened by its use

Convalescence is relatively comfortable

Recurrence of hernia is no more apt to occur than with inhalation anesthesia

While I prefer to operate on these cases under local anesthesia, the patient is given a general anesthetic if he insists on it

Dr Cheever asks about the enlargement of the internal ring Of course, the size of the ring is determined only after exposure, then it is frequently found that it will easily admit two fingers I think this defect should be repaired I always do this, using linen suture, as in the other work on the transversalis fascia

You will notice a very high percentage of Direct and Combined sac cases in this series This is owing to the fact that most of these patients are engaged at heavy work, and have developed the so-called occupational herniae They do not represent a general average percentage They are hard cases to make a good showing with, on account of the nature of their defect and from the fact that they have to return to hard labor

Patients are advised that they can return to work in six weeks after operation, but that they should do no heavy lifting for six months I doubt if many can follow this advice

The convalescence of these patients was extremely comfortable, and free from complications

A careful study of post operative results in hernioplasty will, I believe, show that the incidence of recurrence in this series, is below the average

UNITED STATES PUBLIC HEALTH SERVICE

CHRONOLOGICAL LIST OF CHANGES OF DUTIES AND STATIONS OF COMMISSIONED AND OTHER OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

FEBRUARY 23, 1928

Surgeon (R) O E Denney Ordered to active duty under terms of commission as Surgeon in Reserve Corps, effective March 1 1928 and directed to remain on duty at M H No 66, Carville, La February 15 1928

Assistant Surgeon G J Van Beeck. Directed to proceed from Ellis Island N Y to Thielles N Y and return, in connection with field investigations of mental hygiene being conducted by the Public Health Service February 17 1928

Surgeon H McG Robertson Directed to proceed from Washington, D C to Thielles N Y, and return in connection with field investigations of mental hygiene being conducted by the Public Health Service February 17 1928

Surgeon C H Waring Directed to proceed from Washington, D C to Thielles, N Y and return, in connection with field investigations of mental hygiene being conducted by the Public Health Service February 17, 1928

Assistant Surgeon G T Sprague Relieved from duty at Fort Stanton N Mex, and assigned to duty at U S Public Health Service Relief Station, San Diego, Calif, effective March 1 February 17 1928

Surgeon W L Treadway Directed to proceed to Warsaw, Poland and other points in Europe where medical examination of aliens are being conducted when directed February 17, 1928

Surgeon C L Williams Directed to assume temporary charge of U S Quarantine Station Rosebank, N Y, during absence of Medical Officer in Charge February 18 1928

Surgeon J W Schereschewsky Directed to proceed from Boston, Mass, to Washington, D C for conference at the Bureau relative to public health matters, thence to New York City, N Y to attend meeting of the American Society for the Control of Cancer on March 3 February 18, 1928

Assistant Surgeon General W F Draper Directed to proceed from Washington D C to Minneapolis Minn and return, for the purpose of representing the Service in the capacity of a delegate to the Seventy Ninth Annual Session of the American Medical Association to be held in that city June 11 15, 1928 February 18, 1928

Assistant Surgeon General Thomas Parran Jr Directed to proceed from Washington D C, to Philadelphia Pa and return, in connection with venereal disease control measures February 21, 1928

Assistant Surgeon Albert E Russell Directed to proceed from Washington D C to Wyco, West Virginia during the month of February, in connection with the dust study being conducted at that place by the office of industrial hygiene and sanitation February 21, 1928

Associate Sanitary Engineer Leonard Greenburg Directed to proceed from New Haven Conn, to Washington, D C in connection with the ventilation studies being conducted by the Office of Industrial Hygiene and Sanitation February 21 1928

Surgeon J M Gillespie Directed to proceed from Philadelphia, Pa, to Ellis Island N Y and return, to accompany four seamen patients to Ellis Island February 21 1928

Official

H S CUMMING Surgeon General

is an abnormal occurrence. We know that athletes may rupture tendons or otherwise injure themselves when making extreme exertions.

Conditions Influencing the Metabolic Rate Pickworth⁷ has made an important contribution along this line. He has undertaken to determine the effect of many factors capable of altering the intensity of the bodily processes. He has observed more definite evidence of the response of the metabolism to mental states than previous workers have generally recorded. The following type of experiment seems significant. A violinist played while exhaling into the Douglas bag. Comparison was made between two periods during one of which the music was easy for the performer while during the other it was difficult. The muscular activity in the two cases was nevertheless equal, the difficulty was a matter of cerebration,—of reading the score and dictating the execution. The metabolism was notably increased when mental concentration was featured.

It may be recalled that in the famous experiments at Wesleyan University upon students taking examinations the metabolism was not definitely greater than when they wrote insignificant lines. Also in Waller's observations on proof-readers there was found to be no change in the metabolism when they fixed their attention upon their work or, later, relaxed it. Why are the facts different for the violinist? The suggestion may be ventured that a kind of excitement is involved which is foreign to the quiet business of reading proof and largely to the writing of an examination. There is probably a widespread tenseness in the muscles of the musician as he strives to render with precision the exacting passage.

Electrical Changes in the Pancreas The general truth has come to be appreciated that all physiological changes are signalized by disturbances of electrical equilibrium. Such shifts of potential were long studied in muscle and nerve without seeming to have more than an academic interest. More recently they have been held to throw light on the intimate nature of the underlying processes. They have also found practical application as in the electrocardiogram. Glands, like other tissues in functional activity, give electrical signs on their performance. These indications of a secretory process are of particular value in the case of endocrine organs where the objective evidence of discharge is otherwise indirect. They have, for example, afforded indications of a response on the part of the thyroid to stimulation.

Ge.

disturbances may be detected in the pancreas when the demand is made for the release of insulin from its cells. It had previously been shown that this hormone could be called out by stimulating the vagus nerve. In the present instance its discharge was evoked by injecting glucose into the circulation. Electrodes were so placed as to bring the pancreas into circuit with a suitable galvanometer. It was then observed that when the concentration of the blood-sugar was increased a definite change in the electrical state of the pancreas usually followed.

The latency of this response was variable. In the majority of cases it was less than 2 minutes. The investigators recognized the necessity of excluding the external secretory activity of the pancreas as a possible source of the manifestation. With this object in view they cannulated the duct and were thus able to note the flow of the juice. They confirmed earlier work in showing that when the preparation known as secretin is injected into a vein there is a discharge of juice and an electrical fluctuation. The injection of glucose does not call forth the external secretion. It is natural to infer that the electrical effect is in this case expressive of changes localized in the islet tissue.

Radiation The literature of this subject is rapidly increasing. The discovery that the rays of short wave-length can do much to prevent and correct rickets has been followed by the demonstration that they can modify the nutritive value of certain foods. Attention may be called to an observation of Azuma⁹ which shows in a striking way how positive a form of energy is here represented. When ultra-violet rays are concentrated upon a thin muscle, such as the sartorius of a frog, the response is an intense contraction. This leads to the prompt death of the muscle which is said to pass into "light rigor." Ionized calcium is reported to be requisite to this reaction, a fact which may stand in some relation to the interaction of the rays with calcium metabolism in rickets.

REFERENCES

- 1 Hill Co. Living Machinery. New York: Harcourt, Brace & Co. 1927.
- 2 Clark. American Journal of Physiology. 1927. LXXXII. 191.
- 3 Gerard. The same. 1927. LXXXII. 391.
- 4 Wang, Strouse and Smith. Journal of Biological Chemistry. 1927. LXXV. xxxvii.
- 5 Bauman. J. A. M. A. 1928. XC. 2*.
- 6 Creed and Sherrington. Proceedings of the Royal Society. B. 1926. C. 258.
- 7 Pickworth. The same. 1927. CI. 163.
- 8 German and Barr. American Journal of Physiology. 1927. LXXXII. 733.
- 9 Azuma. Proceedings of the Royal Society. B. 1927. CI. 24.

of carbohydrate or related material which is not oxidative in nature. The activity of nerve seems to be necessarily oxidative but an oxygen reserve appears to be carried for emergencies. Twenty years ago it was commonly held that muscle had likewise a reserve store of "intramolecular oxygen" but we have been led to abandon this belief.

Of course the metabolism of muscle must be great for it is the source of mechanical work. The metabolism of nerve has no such purpose. It is related to the other somewhat as the pressing of an electric button is to the resulting discharge of a sixteen-inch gun. Nature has reduced it to an incredibly low level. Gram for gram the metabolism of active nerve fibers has something like one six-thousandth of the intensity of that in tetanized muscle. When the mass of the two is considered it is the estimate of Gerard that the expenditure of substance in the motor nerve-fibers at moments of discharge is about one-millionth of the associated breakdown in the muscle.

Body Weight and Efficiency Wang, Strouse and Smith⁴ have reported a study of this question which has unexpectedly striking and clear cut results. With young women as subjects they have compared the metabolic cost of a certain standard performance upon a bicycle. The group rated as normal in weight carried out the prescribed task with an increment of 226 per cent over the resting rate of metabolism. The same accomplishment cost the underweight an excess of 323 per cent. The heavy riders were obliged to spend 368 per cent over and above the initial.

When we survey these figures we should consider the following facts. The resting metabolism of the underweight subject is low hence the increase tabulated did not raise it to so high a level as might at first be supposed. The resting metabolism attending an overweight condition is high therefore the increase recorded carried it far above that of the normal. If the point of departure in each case is borne in mind it will be seen that to be underweight is to be moderately handicapped while to be overweight is to be more severely limited in doing work of this type. If there is anything surprising here it is the inefficiency of the light-weight organization. The suggestion is obvious, though the determination would not be easy, that a "normal" weight is that one at which muscular work is carried on with the least increase above the resting plane of metabolism.

Obesity While we are on the subject of body weight it may be well to call attention to a paper by Bauman⁵, a well considered summary of present opinion concerning the causes of this condition. We are accustomed to say that overweight is the expression of a constitutional tendency. Sometimes the peculiarity may fairly be described as an appetite in excess of the current

needs of that system. But it is not by any means clear in every case that the fat person is a large eater. The suggestion is often opposed with vigor. If weight is added in spite of moderation in supply it seems necessary to conclude that the heavy man has an economical organization, that his activities are supported with less than the usual consumption of fuel.

We must dismiss the popular notion that the corpulent individual gets "more of the goodness of his food" than the average subject. The per centile absorption varies little in health. Again, when we compare basal metabolism in fat and lean men there is no important difference excepting in the thyroid group. So far as muscular work goes we have just seen that the overweight body is not frugal but spendthrift. One peculiarity of the obese constitution does appear to be definitely established. This is a subnormal response to feeding, a slight instead of a marked rise of oxidation following a meal. More specifically, the failure is observed when the food has been rich in protein.

Nitrogenous food is generally found to have the effect of speeding up the breakdown of the body reserves. When for some obscure reason it does not do this there must be a tendency to store fat even when the ration is moderate as judged by ordinary standards. We have to consider that if the balance of income and outgo is at all disturbed a very small daily addition to the body leads in the course of a year to a surprisingly large gain. Adiposity once established makes active exercise so unpleasant that the condition is seldom corrected by working off the accumulation. The problem remains as always, to reduce the intake of food without inducing a state of great discomfort and depression.

Reflex Muscle Contractions Sir Charles S. Sherrington and his associates at Oxford continue to demonstrate facts of interest concerning reflex activity. In a recent report⁶ emphasis is placed upon the following observation. When a given muscle can be made to respond reflexly to the stimulation of any one of a number of sensory nerves it is quite unusual for the full power of contraction to be elicited by the employment of a single afferent path. What we call the spinal center for such a muscle is evidently not strictly unified, it is in some degree diffuse. Therefore it is possible to obtain summation effects by stimulating two or more of the afferent strands at the same time.

What we have called the full power of the muscle is that which is developed when its motor nerve is excited adequately. It is found that the tension in this case may endanger the integrity of the parts acted upon. The "factor of safety" which we usually count upon as a feature of the bodily structure is not any too liberal here. The inference is favored that the maximum evolution of force on the part of a muscle

is an abnormal occurrence. We know that athletes may rupture tendons or otherwise injure themselves when making extreme exertions.

Conditions Influencing the Metabolic Rate Pickworth⁷ has made an important contribution along this line. He has undertaken to determine the effect of many factors capable of altering the intensity of the bodily processes. He has observed more definite evidence of the response of the metabolism to mental states than previous workers have generally recorded. The following type of experiment seems significant. A violinist played while exhaling into the Douglas bag. Comparison was made between two periods during one of which the music was easy for the performer while during the other it was difficult. The muscular activity in the two cases was nevertheless equal, the difficulty was a matter of cerebration—of reading the score and dictating the execution. The metabolism was notably increased when mental concentration was featured.

It may be recalled that in the famous experiments at Wesleyan University upon students taking examinations the metabolism was not definitely greater than when they wrote insignificant lines. Also in Waller's observations on proof-readers there was found to be no change in the metabolism when they fixed their attention upon their work or, later, relaxed it. Why are the facts different for the violinist? The suggestion may be ventured that a kind of excitement is involved which is foreign to the quiet business of reading proof and largely to the writing of an examination. There is probably a widespread tenseness in the muscles of the musician as he strives to render with precision the exacting passage.

Electrical Changes in the Pancreas The general truth has come to be appreciated that all physiological changes are signalized by disturbances of electrical equilibrium. Such shifts of potential were long studied in muscle and nerve without seeming to have more than an academic interest. More recently they have been held to throw light on the intimate nature of the underlying processes. They have also found practical application as in the electrocardiogram. Glands, like other tissues in functional activity, give electrical signs on their performance. These indications of a secretory process are of particular value in the case of endocrine organs where the objective evidence of discharge is otherwise indirect. They have, for example, afforded indications of a response on the part of the thyroid to sympathetic stimulation.

German and Barr⁸ have found that electrical

disturbances may be detected in the pancreas when the demand is made for the release of insulin from its cells. It had previously been shown that this hormone could be called out by stimulating the vagus nerve. In the present instance its discharge was evoked by injecting glucose into the circulation. Electrodes were so placed as to bring the pancreas into circuit with a suitable galvanometer. It was then observed that when the concentration of the blood-sugar was increased a definite change in the electrical state of the pancreas usually followed.

The latency of this response was variable. In the majority of cases it was less than 2 minutes. The investigators recognized the necessity of excluding the external secretory activity of the pancreas as a possible source of the manifestation. With this object in view they cannulated the duct and were thus able to note the flow of the juice. They confirmed earlier work in showing that when the preparation known as secretin is injected into a vein there is a discharge of juice and an electrical fluctuation. The injection of glucose does not call forth the external secretion. It is natural to infer that the electrical effect is in this case expressive of changes localized in the islet tissue.

Radiation The literature of this subject is rapidly increasing. The discovery that the rays of short wave-length can do much to prevent and correct rickets has been followed by the demonstration that they can modify the nutritive value of certain foods. Attention may be called to an observation of Azuma⁹ which shows in a striking way how positive a form of energy is here represented. When ultra-violet rays are concentrated upon a thin muscle, such as the sartorius of a frog, the response is an intense contraction. This leads to the prompt death of the muscle which is said to pass into "light rigor." Ionized calcium is reported to be requisite to this reaction, a fact which may stand in some relation to the interaction of the rays with calcium metabolism in rickets.

REFERENCES

- 1 Hill. *Living Machinery*. New York, Harcourt, Brace & Co. 1927.
- 2 Clark. *American Journal of Physiology* 1927. LXXXII. 151.
- 3 Gerard. *The same* 1927. LXXXII. 351.
- 4 Wang, Strouse and Smith. *Journal of Biological Chemistry* 1927. LXXIV. xxxvii.
- 5 Bauman. *J. A. M. A.* 1925. XC. 22.
- 6 Creed and Sherrington. *Proceedings of the Royal Society B* 1925. C. 265.
- 7 Pickworth. *The same* 1927. CL. 163.
- 8 German and Barr. *American Journal of Physiology* 1927. LXXXII. 33.
- 9 Azuma. *Proceedings of the Royal Society B* 1927. CL. 24.

of carbohydrate or related material which is not oxidative in nature. The activity of nerve seems to be necessarily oxidative but an oxygen reserve appears to be carried for emergencies. Twenty years ago it was commonly held that muscle had likewise a reserve store of "intramolecular oxygen" but we have been led to abandon this belief.

Of course the metabolism of muscle must be great for it is the source of mechanical work. The metabolism of nerve has no such purpose. It is related to the other somewhat as the pressing of an electric button is to the resulting discharge of a sixteen-inch gun. Nature has reduced it to an incredibly low level. Gram for gram the metabolism of active nerve fibers has something like one six-thousandth of the intensity of that in tetanized muscle. When the mass of the two is considered it is the estimate of Gerard that the expenditure of substance in the motor nerve-fibers at moments of discharge is about one-millionth of the associated breakdown in the muscle.

Body Weight and Efficiency Wang, Strouse and Smith⁴ have reported a study of this question which has unexpectedly striking and clear cut results. With young women as subjects they have compared the metabolic cost of a certain standard performance upon a bicycle. The group rated as normal in weight carried out the prescribed task with an increment of 226 per cent over the resting rate of metabolism. The same accomplishment cost the underweight an excess of 323 per cent. The heavy riders were obliged to spend 368 per cent over and above the initial.

When we survey these figures we should consider the following facts. The resting metabolism of the underweight subject is low hence the increase tabulated did not raise it to so high a level as might at first be supposed. The resting metabolism attending an overweight condition is high therefore the increase recorded carried it far above that of the normal. If the point of departure in each case is borne in mind it will be seen that to be underweight is to be moderately handicapped while to be overweight is to be more severely limited in doing work of this type. If there is anything surprising here it is the inefficiency of the light-weight organization. The suggestion is obvious, though the determination would not be easy, that a "normal" weight is that one at which muscular work is carried on with the least increase above the resting plane of metabolism.

Obesity While we are on the subject of body weight it may be well to call attention to a paper by Bauman⁵, a well considered summary of present opinion concerning the causes of this condition. We are accustomed to say that overweight is the expression of a constitutional tendency. Sometimes the peculiarity may fairly be described as an appetite in excess of the current

needs of that system. But it is not by any means clear in every case that the fat person is a large eater. The suggestion is often opposed with vigor. If weight is added in spite of moderation in supply it seems necessary to conclude that the heavy man has an economical organization, that his activities are supported with less than the usual consumption of fuel.

We must dismiss the popular notion that the corpulent individual gets "more of the goodness of his food" than the average subject. The percentile absorption varies little in health. Again when we compare basal metabolism in fat and lean men there is no important difference excepting in the thyroid group. So far as muscular work goes we have just seen that the overweight body is not frugal but spendthrift. On peculiarity of the obese constitution does appear to be definitely established. This is a subnormal response to feeding, a slight instead of a marked rise of oxidation following a meal. More specifically, the failure is observed when the food has been rich in protein.

Nitrogenous food is generally found to have the effect of speeding up the breakdown of the body reserves. When for some obscure reason it does not do this there must be a tendency to store fat even when the ration is moderate as judged by ordinary standards. We have to consider that if the balance of income and outgo is at all disturbed a very small daily addition to the body leads in the course of a year to a surprisingly large gain. Adiposity once established makes active exercise so unpleasant that the condition is seldom corrected by working off the accumulation. The problem remains always, to reduce the intake of food without inducing a state of great discomfort and depression.

Reflex Muscle Contractions Sir Charles Sherrington and his associates at Oxford continue to demonstrate facts of interest concerning reflex activity. In a recent report⁶ emphasis is placed upon the following observation. When a given muscle can be made to respond reflexly to the stimulation of any one of a number of sensory nerves it is quite unusual for the full power of contraction to be elicited by the employment of a single afferent path. What we call the spinal center for such a muscle is evidently not strictly unified, it is in some degree diffuse. Therefore it is possible to obtain summation effects by stimulating two or more of the afferent strands at the same time.

What we have called the full power of the muscle is that which is developed when its motor nerve is excited adequately. It is found that the tension in this case may endanger the integrity of the parts acted upon. The "factor of safety" which we usually count upon as a feature of the bodily structure is not any too liberal here. The inference is favored that the maximum evolution of force on the part of a muscle

is an abnormal occurrence. We know that athletes may rupture tendons or otherwise injure themselves when making extreme exertions.

Conditions Influencing the Metabolic Rate Pickworth⁷ has made an important contribution along this line. He has undertaken to determine the effect of many factors capable of altering the intensity of the bodily processes. He has observed more definite evidence of the response of the metabolism to mental states than previous workers have generally recorded. The following type of experiment seems significant. A violinist played while exhaling into the Douglas bag. Comparison was made between two periods during one of which the music was easy for the performer while during the other it was difficult. The muscular activity in the two cases was nevertheless equal, the difficulty was a matter of cerebration—of reading the score and dictating the execution. The metabolism was notably increased when mental concentration was featured.

It may be recalled that in the famous experiments at Wesleyan University upon students taking examinations the metabolism was not definitely greater than when they wrote insignificant lines. Also in Waller's observations on proof-readers there was found to be no change in the metabolism when they fixed their attention upon their work or, later, relaxed it. Why are the facts different for the violinist? The suggestion may be ventured that a kind of excitement is involved which is foreign to the quiet business of reading proof and largely to the writing of an examination. There is probably a widespread tenseness in the muscles of the musician as he strives to render with precision the exacting passage.

Electrical Changes in the Pancreas The general truth has come to be appreciated that all physiological changes are signalized by disturbances of electrical equilibrium. Such shifts of potential were long studied in muscle and nerve without seeming to have more than an academic interest. More recently they have been held to throw light on the intimate nature of the underlying processes. They have also found practical application as in the electrocardiogram. Glands, like other tissues in functional activity, give electrical signs on their performance. These indications of a secretory process are of particular value in the case of endocrine organs where the objective evidence of discharge is otherwise indirect. They have, for example, afforded indications of a response on the part of the thyroid to sympathetic stimulation.

German and Barr⁸ have found that electrical

disturbances may be detected in the pancreas when the demand is made for the release of insulin from its cells. It had previously been shown that this hormone could be called out by stimulating the vagus nerve. In the present instance its discharge was evoked by injecting glucose into the circulation. Electrodes were so placed as to bring the pancreas into circuit with a suitable galvanometer. It was then observed that when the concentration of the blood-sugar was increased a definite change in the electrical state of the pancreas usually followed.

The latency of this response was variable. In the majority of cases it was less than 2 minutes. The investigators recognized the necessity of excluding the external secretory activity of the pancreas as a possible source of the manifestation. With this object in view they cannulated the duct and were thus able to note the flow of the juice. They confirmed earlier work in showing that when the preparation known as secretin is injected into a vein there is a discharge of juice and an electrical fluctuation. The injection of glucose does not call forth the external secretion. It is natural to infer that the electrical effect is in this case expressive of changes localized in the islet tissue.

Radiation The literature of this subject is rapidly increasing. The discovery that the rays of short wave-length can do much to prevent and correct rickets has been followed by the demonstration that they can modify the nutritive value of certain foods. Attention may be called to an observation of Azuma⁹ which shows in a striking way how positive a form of energy is here represented. When ultra-violet rays are concentrated upon a thin muscle, such as the sartorius of a frog, the response is an intense contraction. This leads to the prompt death of the muscle which is said to pass into "light rigor." Ionized calcium is reported to be requisite to this reaction, a fact which may stand in some relation to the interaction of the rays with calcium metabolism in rickets.

REFERENCES

- 1 Hill. *Living Machinery*. New York, Harcourt, Brace & Co. 1922.
- 2 Clark. *American Journal of Physiology* 1922. LXXXII 151.
- 3 Gerard. *The same* 1922. LXXXII 341.
- 4 Wang, Strouse and Smith. *Journal of Biological Chemistry* 1927. LXXXIV xxxvii.
- 5 Bauman. *J. A. M. A.* 1928. XC 22.
- 6 Creed and Sherrington. *Proceedings of the Royal Society B* 1926. C 255.
- 7 Pickworth. *The same* 1922. CI 16.
- 8 German and Barr. *American Journal of Physiology* 1922. LXXXII 73.
- 9 Azuma. *Proceedings of the Royal Society B* 1927. CI, 24.

Case Records of the Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, M D

F M PAINTER, A.B., ASSISTANT EDITOR

CASE 14041

GASTRIC PAIN WITH CONSTIPATION

MEDICAL DEPARTMENT

An American chiropodist seventy years old came to the Emergency Ward September 21 complaining of constipation and pain in the stomach. He frequently contradicted himself in answering leading questions. The history is entirely unreliable.

For eight years he had had "indigestion"—chiefly constipation. He had had much gas and occasionally slight generalized abdominal pain, worse after eating and relieved by defecation. All these symptoms had tended to get a little worse. Eight weeks before admission his real illness began—increased constipation and much more severe generalized dull abdominal pain occurring daily, aggravated by food, often waking him at night and continuing until relieved by defecation. He had been constantly nauseated and vomited several times a week, usually several hours after eating. The vomitus was very sour, often filled a wash basin, and contained, he thought, food eaten several hours earlier. Five weeks before admission he stopped work because it aggravated the pain and he became very weak and dizzy. August 19 X-ray examination in the Out-Patient Department of this Hospital showed a lesion at the outlet of the stomach with complete obstruction. The stomach contained so much food residue and secretion that the outline of its contour was impossible to determine. He thought he had passed several fatty stools in the past few weeks. He was given a letter of admission to the wards, September 30. He had grown steadily weaker and had lost 30 pounds in seven or eight weeks. The constipation and abdominal pain had grown worse. He now came to the hospital at the advice of his physician, who had grown tired of waiting until September 30.

His family history is good.

He had always been fairly well. He had scarlet fever in childhood. Nineteen years before admission examination in the Out-Patient Throat Department showed perforation of the septum, possibly traumatic. He gave a past history of nasal catarrh for many years. He had occasionally very slight edema. Two months and a half before admission a lump appeared in

the left side of his neck. In August, a month before admission, examination in the Out-Patient Department showed a small pea-sized lesion on the inner surface of the lower lip and a swelling under the jaw and in the neck. There was a mass the size of a small plum in the left side of the neck, hard and freely movable. Wassermann negative. He had some loss of memory. During the past few years his usual weight had been 190 or 200 pounds, his present weight was 160 (?)

Clinical examination showed a cachectic, dehydrated, pale, very weak old man, mentally disoriented. The nasal septum was absent. There was purulent secretion. A large hard gland the size of a pigeon's egg, not tender under the lower third of the sternoclavicular muscle. A pea-sized gland, not tender, in the left submaxillary region. Apex impulse of the heart not seen or felt. No enlargement to percussion. Sounds distant. Artery walls moderately thickened. Blood pressure 140/100. Abdomen scaphoid. No masses. Rectal examination, genitals, extremities and pupils normal.

Amount of urine recorded only once, then normal, specific gravity 1.020 to 1.025, urine alkaline at one of three examinations, no albumin, one or two leucocytes at two of three sediment examinations, one or two red cells twice. Blood normal. Wassermann negative. Non-protein nitrogen 40 milligrams. Vomitus, guaiac very strongly positive.

Temperature 97° by mouth to 100.9° by rectum, pulse 71 to 119, respirations 19 to 29.

The patient was in too poor condition for operation. By September 25 he was irrational at all times and refused food and water. He was given subpectoral fluids and fluids through a stomach tube. The temperature steadily rose. September 25 he died.

DISCUSSION

BY RICHARD C CABOT, M D

NOTES ON THE HISTORY

"The history is entirely unreliable." Probably our diagnostic inferences will be equally unreliable.

The X-ray taken in the Out-Patient Department before admission to the wards shows no trace of a pyloric sphincter or gas. It looks like a dilated stomach, although there is rather more peristalsis than I should suppose you would get.

NOTES ON THE PHYSICAL EXAMINATION

Perforated nasal septum we always suspect of being syphilitic, but it may be traumatic, as they have said here. We have to remember that

We should like to know where that edema was. That mass in the neck sounds like malignant disease.

It is a little surprising that they did not find anything in the region of the stomach or pylorus

"Wassermann negative" That is rather important in relation to the septum perforation

that I should say we need not consider it A STUDENT Could it not be a gumma of the stomach?

DR CABOT We do get syphilis of the stomach So far as I know it never causes an ob-



Taken August 19 a month before admission Shows a lesion at the outlet of the stomach with complete obstruction The stomach contains so much food residue and secretion that the outline of its contour is impossible to determine The plate is defaced

DIFFERENTIAL DIAGNOSIS

The danger confronting us here is rather the opposite of many cases in which everything is obscure Here the danger is of overconfidence Everything seems to point one way Cancer of the stomach is the probable diagnosis here What else could it be?

A STUDENT Tuberculosis of the stomach

DR CABOT I do not know anything about

structive pyloric lesion The cases I have seen have been very diffuse lesions over a large portion of the stomach, not confined to the pylorus I do not believe there is such a thing as gumma obstructing the pylorus

A STUDENT How about ulcer?

DR CABOT That is the only other diagnosis which we ought to consider seriously We see obstructing pyloric lesions from ulcer We must

Case Records of the Massachusetts General Hospital

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 14041

GASTRIC PAIN WITH CONSTIPATION

MEDICAL DEPARTMENT

An American chiroprapist seventy years old came to the Emergency Ward September 21 complaining of constipation and pain in the stomach. He frequently contradicted himself in answering leading questions. The history is entirely unreliable.

For eight years he had had "indigestion"—chiefly constipation. He had had much gas and occasionally slight generalized abdominal pain, worse after eating and relieved by defecation. All these symptoms had tended to get a little worse. Eight weeks before admission his real illness began—increased constipation and much more severe generalized dull abdominal pain occurring daily, aggravated by food, often waking him at night and continuing until relieved by defecation. He had been constantly nauseated and vomited several times a week, usually several hours after eating. The vomitus was very sour, often filled a wash basin, and contained, he thought, food eaten several hours earlier. Five weeks before admission he stopped work because it aggravated the pain and he became very weak and dizzy. August 19 X-ray examination in the Out-Patient Department of this Hospital showed a lesion at the outlet of the stomach with complete obstruction. The stomach contained so much food residue and secretion that the outline of its contour was impossible to determine. He thought he had passed several tarry stools in the past few weeks. He was given a letter of admission to the wards September 30. He had grown steadily weaker and had lost 30 pounds in seven or eight weeks. The constipation and abdominal pain had grown worse. He now came to the hospital at the advice of his physician, who had grown tired of waiting until September 30.

His family history is good.

He had always been fairly well. He had scarlet fever in childhood. Nineteen years before admission examination in the Out-Patient Throat Department showed perforation of the septum, possibly traumatic. He gave a past history of nasal catarrh for many years. He had occasionally very slight edema. Two months and a half before admission a lump appeared in

the left side of his neck. In August, a month before admission, examination in the Out-Patient Department showed a small pea-sized lesion on the inner surface of the lower lip and a swelling under the jaw and in the neck. There was a mass the size of a small plum in the left side of the neck, hard and freely movable. Wassermann negative. He had some loss of memory. During the past few years his usual weight had been 190 or 200 pounds, his present weight was 160 (?).

Clinical examination showed a cachectic, dehydrated, pale, very weak old man, mentally disoriented. The nasal septum was absent. There was purulent secretion. A large hard gland the size of a pigeon's egg, not tender under the lower third of the sternoclavicular muscle. A pea-sized gland, not tender, in the left submaxillary region. Apex impulse of the heart not seen or felt. No enlargement to percussion. Sounds distant. Artery walls moderately thickened. Blood pressure 140/100. Abdomen scaphoid. No masses. Rectal examination, genitals, extremities and pupils normal.

Amount of urine recorded only once, then normal, specific gravity 1.020 to 1.025. Urine alkaline at one of three examinations, no albumin, one or two leucocytes at two of three sediment examinations, one or two red cells twice. Blood normal. Wassermann negative. Non-protein nitrogen 40 milligrams. Vomitus, guaiac very strongly positive.

Temperature 97° by mouth to 100.9° by rectum, pulse 71 to 119, respirations 19 to 29.

The patient was in too poor condition for operation. By September 25 he was irrational at all times and refused food and water. He was given subpectoral fluids and fluids through a stomach tube. The temperature steadily rose. September 25 he died.

DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

"The history is entirely unreliable." Probably our diagnostic inferences will be equally unreliable.

The X-ray taken in the Out-Patient Department before admission to the wards shows no trace of a pyloric sphincter or gas. It looks like a dilated stomach, although there is rather more peristalsis than I should suppose you would get.

NOTES ON THE PHYSICAL EXAMINATION

Perforated nasal septum we always suspect of being syphilitic, but it may be traumatic, as they have said here. We have to remember that

We should like to know where that edema was. That mass in the neck sounds like malignant disease.

spiration all day. He had taken thirty to forty grains of quinine daily since September 8. His ears were still ringing. September 10 to 12 he was better, although he had some nausea and vomiting nearly every day. He had several loose movements daily and considerable gas. His appetite had been poor. He had had no fever since September 8.

His father died of consumption.

He had had the diseases of childhood, including scarlet fever. He had had malaria (?) five years before admission and malarial fever for one day last July. He had occasional headaches. He usually took no alcohol.

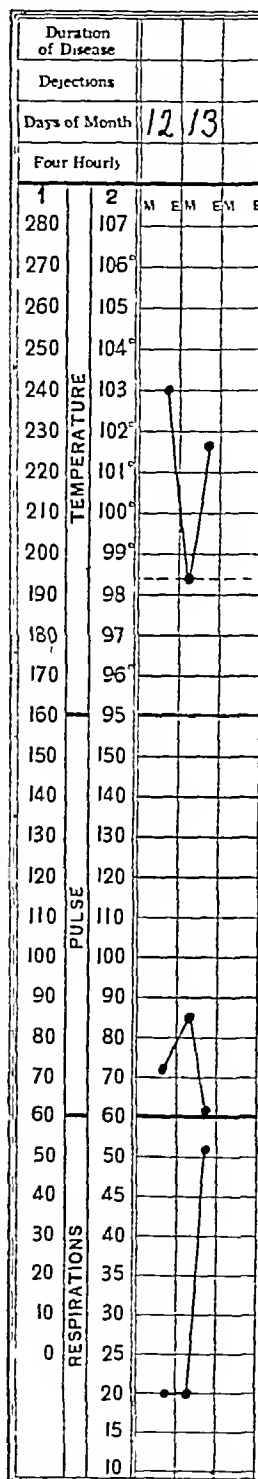
Clinical examination showed a well nourished man who seemed somewhat dazed and was quite deaf. The upper part of the chest front and back was thickly spread with hyperemic papules, some of them surmounted by vesicles which looked somewhat cloudy. There were a few papules over the abdomen. Some gurgling was heard throughout. The splenic dullness was one inch above the costal border. There was no tenderness.

Amount of urine not recorded, urine dark specific gravity 1.016, a large trace of albumin, bile present, a few leukocytes, granular and hyaline casts, some with fat adherent, a few cells on casts, little free fat, rarely an abnormal blood corpuscle. Blood 7,800 leukocytes hemoglobin 92 per cent, no malaria parasites at two examinations. Serum reaction not obtained.

The temperature, pulse and respirations are shown in the chart.

The night after admission the patient vomited once. There was slight cyanosis. At seven o'clock the next morning he said he had not felt so well in months, had no ringing in the ears and no pain anywhere. An hour later, however, after answering one or two questions he could scarcely be roused. The skin and sclerae now showed jaundice. This had followed a fall in temperature to normal. Two hours later he could not be roused at all and was more cyanosed. There were clonic contractions of the jaw muscles. He was unable to swallow. The arms and legs were somewhat stiffened. The condition grew steadily worse. There was a fibrillary tumor of the chest muscles. The pupils later were contracted and did not react. The liver dullness, which the previous night seemed to extend to the costal border, was now from the fourth to the seventh rib. Late in the afternoon there was Cheyne-Stokes respiration. Strychnia had no effect. He continued to have vomiting and diarrhea. One movement contained a little blood. During the day there were some blood streaks in the vomitus, perhaps from the throat. The tongue was ecchymosed where it was bitten and the ear somewhat ecchymosed where blood had been taken for examination. In the course of the day the jaundice became more marked. A friend reported that the pa-

tient was not yellow September 12, although his urine was very high colored. The liver was



therefore see what points there are against that (1) The first point is the age This began at sixty-two I do not believe he had cancer all those eight years, if it is cancer But the type of indigestion described is not the type you usually see with ulcer (2) We have no evidence of perforation or hemorrhage People do not die from ulcer unless it perforates or there is hemorrhage This man died (3) The most positive thing against ulcer is the gland in the neck If it had been there for some length of time it might not have been so significant But this gland has appeared under our observation and it shows the ordinary characteristics of a metastasis I believe it is a metastasis

A STUDENT How about the pea-sized nodule on his lip?

DR CABOT I do not know about that There is not enough said to make it clear to me

A STUDENT Is it possible he had some sort of primary anemia? He had blood in his vomitus and his stools

DR CABOT But how would that account for his pyloric lesion?

A STUDENT Would not anemia be a natural result of cancer of the stomach? He does not show any evidence of anemia at all

A STUDENT He had dehydration, that would account for its absence

DR CABOT Yes, that is a good explanation But not all cases of gastric cancer show an anemia even when there is no dehydration

I do not see that anything is said about his stomach contents The fact favors the diagnosis of cancer I suppose he was too sick to bear the examination

A STUDENT Is it not rare to have carcinoma of the stomach metastasizing in the neck?

DR CABOT No

A STUDENT This could not be secondary in the stomach from a growth in the nasal septum?

DR CABOT I think not I think we would get more evidence in the nasal septum in the way of neoplasm

A STUDENT If it is cancer of the stomach how does that explain the relief of pain by defecation?

DR CABOT It does not, of course But you can suppose that besides cancer of the stomach he had constipation.

A STUDENT Would you expect to get generalized abdominal pain from constipation?

DR CABOT Yes, that is the general expression of it

A STUDENT Is there any danger in passing a stomach tube?

DR CABOT There is always a possibility of putting a stomach tube through the gastric wall I have known it to happen They did not take that chance here

A STUDENT Isn't it queer that they did not palpate a mass in the stomach if he had metastases?

DR CABOT Yes, I think it is queer, but I do not think it should upset the diagnosis We always have several queer things in a well studied case

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of the stomach

DR RICHARD C CABOT'S DIAGNOSIS

Cancer of the stomach

ANATOMIC DIAGNOSES

"Colloid" carcinoma of the stomach

Bronchopneumonia

Arteriosclerosis of aorta and coronary arteries

DR TRACY B MALLORY This was a case of cancer of the stomach It is very interesting histologically There was an annular tumor at the pylorus, almost completely occluding it. Frozen sections made from the tumor at the time of the necropsy showed much fibrosis and very few cells you could definitely say were epithelial Scattered in between the bands of fibrous tissue were some small cells with large vacuoles apparently containing mucus They might have been either phagocytes or epithelial cells with mucous droplets in them. As a matter of fact this type of carcinoma of the stomach is not infrequent If enough sections are cut, one usually finds that there are a few areas of definite adenocarcinoma of the colloid type It is our impression here that many of the so called cases of syphilis of the stomach are really this type of carcinoma in which the epithelial elements are apparently killed off almost as soon as they are formed, but if you hunt long enough you almost always find adenocarcinoma Certainly syphilis of the stomach is one of the rarest diseases there is

We do not know if the glands in the neck were carcinomatous or not, since we did not have permission to open the neck There were no local metastases, none in the liver and none in the regional lymph nodes

CASE 14042

FEVER AND JAUNDICE

MEDICAL DEPARTMENT

A zoologist twenty-six years old entered September 12, 1897

September 7 he sailed from Jamaica after a ten weeks' stay He was unaccustomed to the hot climate and had been more or less run down during the summer and had slept poorly The day after he sailed he had frontal pain in the head and pain in the back and legs, apparently a high fever, and then profuse perspiration, but no chill His pulse was 140 The next day he felt better, but had nausea and considerable per-

tral America and in Mexico. It has frequently invaded the seaports of this country. Severe epidemics of yellow fever developed in Atlantic ports during the eighteenth and nineteenth centuries. In 1793 there was a very bad epidemic in Philadelphia in which the mortality was nearly 10 per cent of the population. There have been epidemics also in Boston, Providence and Newburyport and in some of the other New England seaports. We find yellow fever fairly common to-day on the west coast of Africa, and it occasionally appears in parts of northern Brazil. It no longer extends up the Amazon valley as it formerly did. The last Central American outbreak of yellow fever, according to U S Public Health Reports Vol 40 Pt 1, p 582, occurred in San Salvador in 1924. There were 77 cases and 28 recorded deaths.

There is some question whether yellow fever in Africa is the same as that in this country and whether it originated in Africa or in this country. The usual opinion is that the disease is the same in Africa as it is here and that it originated in Africa. Apparently it is showing a tendency to spread in Africa toward the interior where formerly it was confined pretty much to the coast. It is curious that in Africa there have not been any severe and widespread epidemics of yellow fever such as have occurred on this side of the Atlantic. There was a small epidemic recently in Monrovia in Liberia with eight deaths. A great deal of work on yellow fever has been done in Lagos on the coast of Nigeria, where there is a laboratory which has been financed by the Rockefeller funds. The British also have a laboratory at Lagos. Dr Adrian Stokes, a well-known and very able Irish pathologist, recently died in Lagos while working on the transmission of yellow fever to monkeys.

The etiology of yellow fever is now again in doubt. In 1901 mosquito transmission was demonstrated by Reed and his associates. A few years ago the work of Noguchi indicated that *Leptospira icteroides* was the cause of yellow fever. A few however continued to doubt. The recent work of Drs Sellards, Theiler, and Gay in the Department of Tropical Medicine of the Harvard Medical School threw grave doubts upon the validity of Noguchi's conclusions. Theiler was unable to distinguish *Leptospira icteroides* from *Leptospira icterohaemorrhagiae* and Sellards stated that *Leptospira* is not the cause of yellow fever.

The still more recent work of Professor Oskar Klotz of Toronto, who was sent by the Rockefeller Institute to study the yellow fever of West Africa, materially strengthens the view of Sellards.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Yellow fever

ANATOMIC DIAGNOSES

1 Primary fatal lesion

Yellow fever

2 Secondary or terminal lesions

Extensive fatty metamorphosis of the liver
Fatty degeneration of the liver cells
Icterus
Acute lymphadenitis of mesenteric lymph glands
Edema and congestion of the lungs
Acute degeneration of the kidneys with some fatty degeneration of cells

3 Historical landmarks

Old pleural adhesions

DR TRACY B MALLORY. The anatomical findings in this case are those ordinarily found in yellow fever and were considered by Dr Councilman at the time as entirely characteristic and as confirming the diagnosis. There was a very slight degree of jaundice evident post mortem. The head and brain were negative. The chest contents were entirely negative. The liver was somewhat small, weighing 1057 grams. Yellow and red mottling was visible through the liver capsule. On section this was still more evident. Microscopic examination showed it to be due to very extensive degeneration of liver cells with the appearance of large amounts of fat. A similar type of degeneration was found in the kidney tubules. The glomeruli were negative. No lesions were found in the intestinal tract or stomach. Very extensive bacteriological work was done, yielding, as might have been expected, negative results.

DR CABOT. Could you say that this pathological picture is all in the liver and kidneys?

DR MALLORY. I believe hemorrhagic erosions and hemorrhages of the stomach are fairly usual. Are they not Dr Shattuck?

DR SHATTUCK. Yes, they are fairly common.

DR CABOT. In the liver and kidneys there is nothing that does not occur in other diseases. Is it the association with an acute infection that makes one able to say that this is yellow fever?

DR MALLORY. I know so little about yellow fever I should not like to say.

DR RICHARD B KING. Is the jaundice always hemolytic?

DR SHATTUCK. At the beginning it is always hemolytic. Later there is liver damage.

REFERENCES

- A Treatise on the Nature, Origin and Progress of the Yellow Fever, with Observations on its Treatment, comprising an Account of the Disease in Several of the Capitals of the United States, but more particularly as it has prevailed in Boston—Samuel Brown, M B Boston 1800.
Yellow Fever—R LaRoche M D 1855 Vol I.
The Relation between Wells Disease and Yellow Fever—Andrew Watson Sellards Annals of Trop Med and Parasitol Vol XXI No 2 July 22 1927.
The Fate of *Leptospira icteroides* and *Leptospira icterohaemorrhagiae* in the Mosquito *Aedes aegypti*—Douglas Merrill Gay and Andrew Watson Sellards Annals of Trop Med and Parasitol Vol XXI No 3 Oct 10 1927.
The Pfeiffer Reaction with *Leptospira* in Yellow Fever—Andrew Watson Sellards Amer Jour Trop Med Vol VII No 2 Mar 19.
Jaundice and the Liver Lesions in West African Yellow Fever—Oskar Klotz and Winifred Simpson Amer Jour Trop Med Vol VII No 5 Sept 1927.
The Transmission of Yellow Fever to Macacus Rhesus—Adrian Stokes J H Bauer and N Paul Hudson Jour A M A Vol 90 No 4 Jan 25 1923.

most immediately after death the head drew back and muscular rigidity set in.

DISCUSSION

BY GEORGE C SHATTUCK, M D

The history of this case points certainly to acute infection. I have not read the necropsy report, but it has been hinted to me that this might be a case of yellow fever. If we are to make that diagnosis we must first of all do what we can to exclude malaria, spirochetal jaundice and dengue.

It is very difficult on the evidence presented here to exclude malaria. A negative blood examination after the taking of quinine for several days would have no diagnostic value. The leukocyte count is normal. One might expect leukopenia with an excess of large mononuclears in malaria. This does not occur so regularly in the early stages as in the later stages of malaria. His fever has evidently been of an irregular character, with sudden onset and apparently a remission and a recurrence of fever on admission to the hospital. That would go well enough with malaria. Toward the end of the examination the spleen is said not to have been much enlarged. An enlarged spleen goes well with most forms of malaria, but it is by no means constant with aestivo-autumnal malaria. On the other hand it is not expected in yellow fever. Malaria might perhaps have been excluded by splenic puncture and examination of the smear from the spleen, if there had been no pigment and no malarial plasmodia found. The rash that the patient had was atypical and does not associate itself with malaria. It is difficult to classify. An important point against malaria is the failure of quinine to control the fever. On the other hand there was vomiting, and we do not know how much quinine was absorbed. It does not seem that on the evidence given we can with certainty exclude malaria.

We might then take dengue. The sudden onset, the remission of temperature, the headache and chilly sensations all go well enough with that. I find no mention of severe pains in the back and legs which are so common with dengue. They are also common with yellow fever. The rash was not like that of dengue, jaundice is rare in dengue and death is unusual.

Spirochetal jaundice is not ordinarily such an acute disease. It is not as a rule characterized by remissions of the fever. It is not however a disease with which I am to any extent familiar, and I should not be able with certainty to exclude it on the evidence given. The urine seems not to have been examined for spirochetes.

I will then turn to the possibility of yellow fever in this case. This patient came from Jamaica in 1897, before the time when the mode of transmission of yellow fever was known, and when yellow fever was very prevalent in the West Indies. The disease is characterized by sudden onset as in this case. It frequently

shows remissions of temperature after the second or third day of the disease and exacerbations of fever later on. It is a disease which is often rapidly fatal, sometimes within a very few days, generally within ten or eleven days. The deaths in the earlier period are from overwhelming toxemia. Those in the later stage are apt to be associated with uremia, kidney changes being common in yellow fever and urine being scanty when the kidney has been much damaged. Jaundice goes very well with yellow fever and is rare in dengue. Some of the other more characteristic features of yellow fever such as the marked flushing of the face and injection of the eyes which one looks for in the earlier days of the disease are not recorded as having been present. However, the patient was not in hospital at the time and we cannot trust much to hearsay for the early signs. The frontal headache in the beginning and the vomiting go well with yellow fever. The profuse perspiration is common, although a dry skin is perhaps more frequent. One important point here is the pulse rate. At the onset the pulse rate was 140. One of the features one looks for in yellow fever is continued high or rising temperature associated with a falling pulse. In other words, in yellow fever after a few days a marked discrepancy between pulse rate and temperature develops. The chart on the last days shows a pulse ranging between 88 and 60 with a temperature ranging in the same interval from 103° to 101.6°. The highest dot on the temperature curve is associated with the lowest in the pulse record. The pulse clearly shows a tendency to fall lower than one would expect it to fall with a temperature of that sort. That would go well with a diagnosis of yellow fever. The skin manifestations of yellow fever are in no way characteristic. Rashes of various kinds are found. That which the patient had would not be inconsistent. The vomiting in yellow fever is characteristically black from the presence of blood pigment. Jaundice generally develops after a few days and bile may appear in the urine. Marked albuminuria is expected. On the whole the diagnosis of yellow fever seems the most probable in this case.

DR EDWARD L YOUNG Is immediate muscular rigidity characteristic of yellow fever?

DR SHATTUCK Rigor mortis is marked in death from yellow fever. The albuminuria would go well with yellow fever. One of the features of yellow fever is that albuminuria begins very early in the disease.

DR CABOT Is there more albuminuria than in other infections?

DR SHATTUCK Yes, there are large amounts of albumin in the urine in yellow fever.

DR CABOT Will you say something as to the present occurrence of yellow fever in different parts of the world?

DR SHATTUCK In the past yellow fever has been widely endemic along the coast of South America, throughout the West Indies, in Cen-

even the medical profession have in our present condition of public opinion steadily lost ground in the last twenty years" Cherington remarks that "the greater learning the more exacting code of ethics, the many helpful contributions made to public and private life have not offset some influence at work making the public reluctant to give lawyers the full measure of confidence their accomplishments seem to merit"

As one remedy for that part of the public distrust which is unreasonable Professor Cherington suggests the influence of the advertising as well as the reading columns of the daily press He adds,—“For the advertising lawyer in the ordinary sense of one advertising his own professional skill, disapproval and contempt are merited, and usually are swiftly administered But this practice deemed to the individual lawyer, may be found to have a real mission for the profession as a whole”

After pointing out the changes which paid advertising has brought about in food, clothing business and personal habits, Cherington asks “What ethical or practical reasons can there be against its use in setting up a better understanding of the law and its place in life?”

Professor Cherington enumerates a dozen specific matters in which legal reform depends upon enlightened public opinion He adds that if “The legal profession finds itself in a position where either a knowledge of advertising technique or of the processes underlying the influencing of public opinion through advertising would be of service—I am confident that they would find the members of the advertising craft ready to give them any assistance in their power”

The situation of the medical profession is similar in many ways to that of the lawyers After making all due allowance for the fact that Professor Cherington's work is advertising, does not his article suggest methods of informing the public which may well be considered by the various committees of the Massachusetts Medical Society?

SCHOOLS OF CHIROPRACTIC AND NATUROPATHY

DR N P COLWELL, Secretary of The Council on Medical Education and Hospitals of the A M A., has forwarded a report of a series of inspections of irregular borderline institutions professing to offer courses for those who are to practice the healing art

This is a very important document a copy of which appears on page 218 and contains information which is now available for those who may need to know the facts

Dr Colwell is now able to furnish further information relating to irregular medical institutions and he and the Council are to be congratulated for this important contribution to the record of existing institutions of this class

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

GARGLE, S L M D Tufts College Medical School, 1925 Interne Medical Division, Boston City Hospital—July 1925 to March 1927, Assistant Physician at Thorndike Memorial Laboratory of the Boston City Hospital Address Boston City Hospital Associated with him are GILLIGAN, DOROTHY R B S, M S Assistant to Dr Blumgart Address Boston City Hospital And

BLUMGART, H L B S, M D Harvard 1921 Faculty Instructor in Medicine, Harvard Medical School, Assistant, Thorndike Memorial Laboratory, Boston City Hospital Address Boston City Hospital Their subject is “The Antidiuretic Effect of the Oxytocic and Pressor Principles of the Extract of the Posterior Lobe of the Pituitary” Page 169

REID, WILLIAM D A B, M D Harvard 1909 Assistant Professor Cardiology, Boston University School of Medicine, Associate in Evans Memorial Hospital Address 510 Commonwealth Avenue, Boston Associated with him is

KENWAY FLORENCE L B S, M S Research Assistant, Evans Memorial Hospital Address 80 E Concord Street, Boston Their subject is “The Value of the Electrocardiogram in Acute Rheumatic Fever” Page 177

EMERY, EDWARD S, JR A B, M D Harvard Medical School, 1920 Assistant in Medicine, Harvard Medical School, Junior Associate, Peter Bent Brigham Hospital. His subject is “Carbohydrate Indigestion Its Diagnosis and Treatment” Page 181 Address 520 Commonwealth Avenue, Boston.

O'BRIEN, THOMAS J Ph G, M D Harvard Medical School, 1899 Associate Professor of Medicine, Tufts College Medical School, Assistant Visiting Physician to the Boston City Hospital, Vice-President of the Massachusetts Medical Society Address 501 Beacon Street, Boston Associated with him is

BANCKER, EVERT A M D Emory University School of Medicine, 1925 Formerly Interne on the Third Medical Service at the Boston City Hospital Address 811 Piedmont Avenue, Atlanta Georgia Their subject is “Gonococcus Septicemia Recovery Without a Cardiac Complication Report of a Case” Page 184

ROLFE, WILLIAM A M D Harvard, 1890 Instructor in Proctology, Harvard Graduate School, Surgeon Rectal Department, Boston Dispensary, Fellow American Proctologic Society His subject is “The Treatment of Internal Hemorrhoids with Quinine” Page 187 Address 331 Beacon Street, Boston

The New England Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY
under the jurisdiction of the following named committee

For Three Years

JOHN W. BARTOL, M.D. FREDERICK T. LORD, M.D.
CHANNING CROTHINGHAM, M.D.

For Two Years

HOMER GAGE, M.D. Chairman EDWARD C. STREFFER, M.D.
EDWARD W. TAYLOR, M.D.

For One Year

WILLIAM H. ROBERT, JR., M.D. ROGER I. LEE, M.D.
ROBERT B. OSGOOD, M.D.

EDITORIAL STAFF

DAVID L. EDWALL, M.D. STEPHEN RUSHMORE, M.D.
RICHARD HUNT, M.D. HANS ZINSSER, M.D.
JOHN P. SUTHERLAND, M.D. BENJAMIN WHITE, PH.D.
GEORGE R. MINOT, M.D. HENRY R. VIKS, M.D.
FRANK H. LAHEY, M.D. ROBERT N. NYE, M.D.
SHIELDS WARREN, M.D.

WALTER P. BOWEN, M.D. Managing Editor

ASSOCIATE EDITORS

GEORGE G. SMITH, M.D. WILLIAM B. DREED, M.D.
JOSEPH GARLAND, M.D.

THE NEW HAMPSHIRE MEDICAL SOCIETY

PUBLICATION COMMITTEE

D. R. SULLIVAN, M.D. EMERY M. FITCH, M.D.
JOSEPH J. CORB, M.D.

THE VERMONT STATE MEDICAL SOCIETY

PUBLICATION COMMITTEE

WILLIAM G. RICKER, M.D. C. F. DALTON, M.D.
J. A. WARR, M.D.

SUBSCRIPTION TERMS \$6.00 per year in advance, postage paid
for the United States, Canada \$7.00 per year; \$7.50 per year
for all foreign countries belonging to the Postal Union.

Material for early publication should be received not later
than noon on Saturday. Orders for reprints must be sent to
the Journal office, 126 Massachusetts Avenue.

The Journal does not hold itself responsible for statements
made by any contributor.

Communications should be addressed to The New England
Journal of Medicine, 126 Massachusetts Avenue, Boston, Mass.

EARLY DIAGNOSIS

We are living in an age of slogans. The public conscience is constantly being pricked by a rapid succession of reminders that it ought to do something about something. Fire prevention week is followed by paint up and clean up week, and paint up and clean up week by health examination week. Then, in close order, may come buy a home week, turn-in-the-old-car week, see the world by trolley week, take a bath a week week, and so forth. In fact, so great is the amount of approximately free advice being given, that we are in great danger of becoming calloused to these insidious reminders and neglecting some of the opportunities for personal or civic betterment that are thundering at our gates.

In more serious vein, however, it is salutary that the attention of both medical profession and laity is being constantly turned towards the necessity, in medicine, of early and accurate diagnosis. The periodic health examination may

have been a bit overdone, as the professional boosters, in their enthusiasm, are apt to overdo things, but it cannot be denied that very often the equation, early diagnosis + early treatment = cure is a correct one.

This rule frequently obtains in all departments of medicine, as regards tuberculosis and cancer, which are now occupying so much of our attention, it is singularly true. With these diseases, one of which still bulks so large as a cause of sickness and death, the other of which is becoming increasingly prevalent, early diagnosis is the one most important factor in their control.

THE SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS

SINCE the time of Detweiler, there has been a constantly increasing tendency to prescribe longer and more complete rest in the treatment of pulmonary tuberculosis, and rest is now regarded as the most important single therapeutic measure in promoting an arrest of the disease. Benefit from rest encouraged the successful application of artificial pneumothorax. This, in turn, led to the trial of surgical collapse when pleural adhesions prevented the use of the artificial pneumothorax. The development of operative procedures has progressed rapidly during recent years and favorable results have been reported in large series of cases by European surgeons after extra-pleural thoracoplasty. An appropriate selection of patients for operation is an important factor in successful surgery.

Dr. Edward W. Archibald, Professor of Surgery at McGill University, Montreal, has been especially interested for more than a dozen years in the surgical treatment of certain forms of pulmonary tuberculosis, has had a large experience in thoracoplastic operations and is qualified to speak with authority on "The Selection of Patients for Surgical Treatment in Pulmonary Tuberculosis."

A cordial invitation to hear him at the meeting of the Trudeau Society in John Ware Hall, Boston Medical Library, Wednesday evening, March 21, is extended to physicians, medical students and nurses.

INFORMING THE PUBLIC

In a recent issue of the *Boston Herald* under the caption *Advertise the Law* appeared part of an address delivered at a recent meeting of the Cincinnati Bar Association by Paul T. Cherrington. Formerly a Professor in the Harvard School of Business Administration, prominent in civic matters, he is now director of research for the J. Walter Thompson Advertising Company.

In speaking of the public distrust of lawyers he quotes the following remarks of Charles R. Holden, president of the Chicago crime commission before the American Bar Association in 1925: "The ministry, the teaching profession,

State Medical Boards contains a paragraph which points out what some regard as one of the most significant tendencies in the medical boards of today "Evidently the opinion is growing among state medical boards that the examinations for licensing should be confined largely to the various branches of clinical medicine, exclusive of the technical features of operative surgery and other details of specialized practice and that examinations to test the qualifications of the individual to begin the practice of medicine, should be in the nature of general comprehensive examinations which may well include the practical application of the basic sciences in medical practice. If such an attitude is to prevail it would naturally be assumed that the State Boards would concern themselves more with the educational preparation of the student and with the quality of the work done by the schools in which these students take their courses."

The correlation between quality of work in college and medical school is now being studied in a number of institutions, but no definite data are available on this question. But Appendix C gives some interesting opinions which, in general, suggest that the correlation may be high.

In Appendix D are given some figures on the colleges which prepare most of the students for the study of medicine.

The most interesting chapter in the Report is the Summary (Chapter VI) which does not lend itself to further condensation. In spite of its title it goes far beyond the contents of this as well as of the Preliminary Report of January, 1927, and indicates something of the wide scope of this enquiry now in its third year. It is to be recommended for careful reading to every physician as well as to lay persons interested in medical education.

The Summary which is found in chapter six sets forth the conclusion of the Commission and is herewith reproduced.

A review of the data and opinions regarding medical education in the United States and Canada indicates that a large majority of physicians and educators who are familiar with the problem are evidently of the opinion that the general features of present medical training compare favorably with those in other fields of education and that very great improvement has occurred in recent years. It is true that only a few medical schools have been able to approximate the highest standards in every detail. It is also evident that medical education is held responsible by some for many of the inadequacies of medical service and practice and for the shortcomings of individual physicians in which medical education is usually a minor factor. Moreover since medical education is largely built upon general education some of the defects charged to it are traceable to faults of earlier training.

Most of the medical schools have adopted uniform minimal standards of education but above these minimal requirements are many features of unevenness and often wide differences among the medical

schools in buildings, equipment, financial support, student body, teaching personnel, hospital facilities and educational policies. This is probably desirable to the extent that it introduces variety in medical training and meets different needs but in many instances it points to serious handicaps under which some of the schools labor. A number of defects in the program of training are recognized and are engaging the attention of the profession, the universities, the medical faculties and the state medical boards.

Efforts have been made to bring and to keep medical education abreast of the enormous growth of knowledge of disease of methods of diagnosis, treatment and prevention and of the sciences upon which medicine is dependent. These efforts have resulted in numerous regulations by educational, medical and legal agencies. It is generally agreed that these regulations have been important factors in the marked improvement in medical training and in the elimination of many medical schools of low standard. They have become so detailed and rigid however that they hamper rather than assist further improvement and are responsible for some of the present defects in medical training, particularly those relating to over-regulation, over-crowding and rigidity. The opinion is growing that there should be a modification of these regulations to permit reasonable freedom and further growth of medical training along sound educational and scientific lines.

The regulations which have probably been most important in the improvement of medical education and which are large factors in the present rigidity and over-crowding are the requirements of each state for medical licensure. The splendid spirit of cooperation between those charged with the responsibility for medical licensure and those conducting medical education promises to correct satisfactorily some of the present difficulties.

REQUIREMENTS FOR MEDICAL LICENSURE

The primary function of medical licensure is to determine the fitness of the individual to practice medicine. It is generally appreciated that the chief factors which determine that fitness are the character, industry and ability of those who study medicine and the character of the medical training. It is further recognized that medical training is an educational procedure and should within reasonable limits be conducted by the medical schools without undue regulation of the details by outside agencies. The opinion is rapidly growing that some modifications in the functions of the state medical boards and in their methods of examination should be made. The suggestion has been made by some observers that they should confine their function to the approval of medical schools and the general features of medical training leaving the details of curriculum and method of instruction to the medical school authorities and that they should conduct only comprehensive examinations in the various major branches of clinical medicine not in details of the basic sciences except as they relate to clinical medicine or in the technical aspects of the various medical and surgical specialties. It is fully appreciated by those who have these proposals in mind that the suggested type of examinations would be given only to graduates of the schools approved by the respective state medical boards and that they should reserve full right to conduct examinations in the basic sciences in those instances where they thought it advisable.

Some of these suggestions are in operation in part already for practically all states have regulations covering the educational features of both the medical and pre-medical courses and have exercised discrimination among schools. It is maintained by those who have suggested some of these changes that the states could shift the emphasis of their licensing function without endangering the check which they have

ELA, ALFRED A Boston layman and student of medical history His subject is "Art Reference Libraries and Medicine" Page 188 Address Quincy House, Boston

PATTERSON, D C M D University of Md, 1906 F A C S Attending Surgeon, Bridgeport Hospital His subject is "Report of Hernia Work Under Local Anesthesia" Page 191 Address Bridgeport, Conn

STILES, PERCY G S B, Ph D Assistant Professor of Physiology, Harvard University, Member, American Physiological Society Secretary of the Massachusetts Branch of the Society for Experimental Biology and Medicine His subject is "Recent Progress in Physiology" Page 195 Address Harvard Medical School, Boston

THE SECOND REPORT OF THE COMMISSION ON MEDICAL EDUCATION

THE Second Report of the Commission on Medical Education has been published as of January, 1928 It represents a continuation of the assembling of data and opinions bearing on various phases of medical training

The Commission, it will be recalled, includes university presidents and other educational administrators, medical educators and representatives of State boards of licensure Their purpose is to survey the whole field of medical education, including the preparatory years, comprehending general education as well as specific "premedical" courses of study, and since the physician is to be always a student, the period of medical practice after leaving school is given special consideration.

Certain obviously important problems emerging in this field are to be studied intensively, and extensive compilations of data and opinion will be considered as throwing light on problems now formulated or as leading to the formulation of new problems

The present report comprises five chapters of data and opinions, with a Summary and six appendices containing more detailed information than is included in the text

The first chapter contains certain facts regarding the type of practice, and previous training, as in college and medical school and hospital, of sixteen hundred successful physicians from four hundred communities, and the opinions of these physicians as to some of the elements in medical education It is specifically stated in the Foreword that the Commission has arrived at no conclusion and it would be well to suggest that readers of the report be equally cautious and abstain from drawing conclusions from the figures presented What the figures mean, if they mean anything at all beyond what they say on the surface, is not pointed out The background against which their meaning may

appear is not even hinted at Yet something might have been added to advantage An example is found on page 9 of the Report The physicians are divided into three groups on the basis of the year of their graduation in medicine Why three groups, and why "previous to 1900", "1901 to 1910" and "1911 or later"? It is shown that twenty per cent of those graduating in 1900 or before, had a four year medical course If the year for this group had been put back, so as to exclude all with a four year medical course, a better basis for induction would appear Why is 1910 chosen for the end of the second group? That year represents no essential change in educational procedure How ever important the Carnegie Report by Abraham Flexner proved to be later, no formal change in medical education was made in that year It was in 1914 that one year of premedical study in college was required, and in 1918 that two years were required as a minimum for all Class A Medical Schools Yet these significant dates do not appear in the grouping

An interesting light might be thrown on the subject if the amount of work done by these successful practitioners was compared with the minimum requirements at the time of their study in the matter of premedical work Now the minimum premedical requirements are two years for most schools, representing far more than a majority of medical graduates each year Yet among medical graduates each year there is a steadily increasing majority who have received the baccalaureate degree in arts or science Why do the students voluntarily take so much more than the minimum if the minimum is, as some claim, too great?

The summary of the chapter on the data and opinions of successful practitioners closes with this noteworthy sentence "The most frequently mentioned elements (which contribute to professional success) are character, personality, industry, training and constant study" It would be well to bring this testimony to the attention of those planning to study medicine

The second chapter is a Further Study of the Demands on Medical Practitioners, and "in a general way, this and previous studies of the demands for medical service substantiate the common opinions that a rather larger proportion of practice is confined to a relatively few diseases either in general practice or in special practice It is clear from these studies, however, that in general practice, physicians should be qualified to recognize serious conditions in their incipient stages, such as cardio-renal, malignant and tuberculous diseases, for examples, and that general practitioners should be prompt to see that patients suffering from some of these diseases should have attention from those who are qualified by special preparation to deal with them"

The chapter on Data and Opinions of the

ical subjects but to the pre-medical college courses also. Many evidently believe that the presentation of subjects should not be made primarily from the standpoint of the individual subject, but more from the point of view of the general interest of the student, and that in the clinical branches there is a tendency to over-emphasize the rare and serious types of illness and to place too little emphasis upon normal health and its conservation as distinguished from disease and its treatment.

The selection of the teaching personnel of medical schools is considered by some to be as important as the selection of students. The vital influence of stimulating teachers who are masters in their individual fields can hardly be over-estimated. In the clinical divisions the responsibilities of the medical teacher are very exacting and demand the highest type of clinical ability, familiarity with problems of medical practice and health needs, capacity for teaching and organization and an active interest in investigation. There is no longer any serious doubt but that these major activities can be carried out satisfactorily only by the employment of the primary interest of considerable numbers of physicians in various capacities. The several major functions of the clinical departments can be carried out most satisfactorily only by a recognition of the primary responsibility for the care of patients and the teaching of medical students in proper methods of medical practice and by liberal financial support for an adequate staff of investigators, teachers, graduate students, clinic workers and other personnel.

Much has been said about the length and cost of medical education. There is an impression that the prescribed training in this country is much longer than in other countries, but so far as the minimal requirements are concerned, such is not the case. Efforts to provide an educational foundation for medicine in this country have been recent, but the minimal requirements to-day are approximately those of other civilized countries in none of which the economic conditions are as satisfactory. It is true, however, that the average age at which graduates are prepared to begin their life work is higher than elsewhere. Several factors operate to make this situation some of which are not controllable by medical schools. The elementary and secondary schools and the colleges do not develop the student to as advanced a point in training as they do abroad. Many students do not decide upon their professional career until the last year in college or until after graduation, for there is a growing tradition that a college training is the desirable minimum of general education regardless of subsequent specialized training or life work. There are many who believe that the preference given to college graduates for admission to the best medical schools has, for practical purposes, elevated the minimal pre-medical requirements by one or two years. It is stated by those who favor a full college training preliminary to the medical course that the general mental training that comes from a university course is of great value in contributing to intellectual self-reliance and maturity. Others are equally confident that with the development of medical training along sound educational lines, two years of preliminary university work of high quality give sufficient necessary preparation. The number of students with more than the minimal requirements who apply for admission to medical schools is increasing due to the several factors mentioned. Practically all students take an internship usually from one to two years and many take further graduate work before beginning practice.

Time could undoubtedly be saved in the primary and secondary schools and in the colleges by the reduction in time required for various subjects and courses by the elimination of unnecessary vaca-

tions and by the stimulation of better scholarship. Probably some time could also be saved if students applying for admission to medical schools were selected more on the basis of individual capacity than on the basis of degrees, courses and grades which are largely bookkeeping items. In the medical school proper, time saved by the elimination of long vacations and by some reorganization of the present methods of instruction could be used to the great advantage of the student. There is little doubt that efforts in these several directions would make it possible for a student to graduate in medicine earlier than at present and give him opportunity to better round out his preparation by additional hospital, laboratory or clinical experience before entering upon an independent career. Those who favor such changes do so with the idea that a high level of training can be secured through better and more intensive methods and that the time saved can be utilized for further development of the student, and not so much with the thought of shortening the time of training. It is also appreciated by them that these changes can be brought about only gradually and will probably take a period of years to realize.

Many physicians and teachers believe that there is considerable room for improvement in the methods of laboratory teaching that too much reliance is placed on laboratory work as a method of instruction and that too much time is consumed in the details of unimportant and uninforming routine experiments. No one questions the value of the contributions which have come from laboratory research and that every effort should be directed toward the support and extension of it. It is generally appreciated that the extent to which a proper philosophy of scientific method is acquired by the student during training will determine to a large degree the future level of scientific practice of the physician. It is fully appreciated by all who are familiar with medical practice that much of it is in the nature of investigation and that medical education should be largely concerned with training in the methods of investigation. There are no serious suggestions that vital portions of scientific training be eliminated or that the training be focused alone on practical and immediate problems. There is, however, considerable feeling that an unreasonable amount of time is consumed in meaningless laboratory work as a method of education. The increasing importance and use of laboratory and other devices of accuracy in much of clinical teaching possibly should modify somewhat the character and extent of similar procedures in the science courses.

A hospital period of training has come to be recognized as an essential part of medical preparation and a number of states now require an internship for licensure to practice. The greater use of internships has been one of the most important factors in the improvement of medical training. Many educators as well as physicians feel, however, that the educational phase of hospital and outpatient training could be more fully developed. In the hospital or organized for the best possible care of its patients usually for serious and emergency illness and surgery, there is a high degree of subdivision of labor and a large number of special technical services and personnel. The interne is likely to rely too much upon these various services at the expense of his own training. Some are of the opinion that the internship is defective in respect to training in self-reliance and independent judgment, for the diagnosis and treatment of patients in the hospital are largely done by specialists and the interne sees only the more advanced and acute types of illness. It is well recognized that over three-fourths of the medical needs of the community are for relatively minor and early manifestations of disease usually requiring rather simple treatment and that many of the

on medical training. The fact that over ninety five per cent of graduates of schools which conduct medical training on the generally accepted standards pass the examinations for licensure indicates that the examinations are not the most important factor. It is fully appreciated by those who have these possible changes in mind that many of the regulations have become legal requirements and that in certain states some legislation covering these proposals, if they were accepted, would have to be passed. The passage of basic science laws recently in some of the states which have recognized multiple standards of practice of the healing art and have developed multiple boards of licensure has added some new features to the problem of medical licensure.

The suggestion is made quite frequently, that there should be a differential licensure for the practice of major surgery and possibly for some of the specialties. Such suggested licensures would be granted only on the evidence of special graduate training and ability. That there would be great difficulty in administering such a requirement is well recognized. It is maintained by many others inasmuch as most of the major surgical procedures are carried out in hospitals that the hospitals are the organizations to decide most satisfactorily the qualifications of the surgeons and other physicians who work in them and that they have a large public responsibility to do so.

Twelve states now require an internship for licensure to practice and some medical schools require the internship for the degree of Doctor of Medicine. There is a growing belief that the internship should be required by all states for licensure, but inasmuch as it is largely an educational procedure, that the character and content should be determined and approved by the medical schools rather than by the state medical boards.

THE MEDICAL COURSE

Medical training is dependent upon general education and some of the difficulties encountered in it are traceable to faults in early education, which are well recognized by those engaged in the fields of primary, secondary and college education. It is probably true that the present system of education in the United States has a distinct tendency to provide a diffused superficial training for the average student rather than a thorough understanding of any one field and makes very little provision for the student of unusual promise who may have special interests. Real education can only be acquired through the individual efforts of the student himself and our present system of general education does not ordinarily develop the student in methods of study nor awaken in him serious intellectual interests.

It is generally appreciated that the difficulties confronting general education in this country have been unprecedented, particularly in relation to the enormous growth of the student body, the difficulties of securing trained teachers and proper equipment and the great pressure to provide numerous special and vocational types of training. Similar difficulties have been encountered in higher education and have been responsible in part for the lack of intellectual self reliance and responsibility on the part of most students. Many of the methods of secondary education have continued into college and university training. There are evidences of a change in the situation through the development of electives, freedom for reading and special work, comprehensive examinations and a growing emphasis upon individual achievement. Although progress is being made despite the difficult circumstances there is a general consensus of opinion that the quality of education in this country is still considerably below that of a number of European countries. It is probably true that many of the defects found in general education have also been prominent in medical education here

and that progress in medical education is partly dependent upon advances in general education.

The various efforts made to establish uniformity in medical education and to put into the medical course teaching in all phases of scientific and medical knowledge have been responsible for great overcrowding. Attempts to correct the difficulty have been largely directed toward rearrangements of the curriculum and reallocation of various subjects and hours. Medical education is a problem of education and in it, as in other forms of education, attention should be directed more to the development of the individual student than to matters of the curriculum. Attempts to establish for all students a uniform time for each subject are obviously unsound. Reacting to this situation, many of the medical schools have inaugurated various forms of free time and elective periods designed primarily to permit greater individualization to provide more freedom for reading, thinking and leisure to place upon the student more responsibility for his own training and development and to encourage more thorough knowledge and real scholarship. That a too free elective system has sources of evil has been fully appreciated also, especially for students who are unaccustomed to independent work. The dangers of superficial and un disciplined training, lack of unity in courses, dissipation of energy and too early endeavors towards specialization have been mentioned by students as well as teachers.

The general objective of medical education for over ninety per cent of students is an adequate preparation to begin the practice of medicine and a training in sound methods of study which will equip them to continue their self-education throughout their professional life. Every indication points to a modification of our conception of what the basic course in medicine should attempt. The widening fields of medical activity, the development of various technical procedures and the growing emphasis upon early treatment and the preventive aspects of medical practice make it quite evident that the basic course can not possibly provide a student with an adequate knowledge of all phases of medical science or practice. The amount of knowledge and scientific accomplishment which can be acquired in a reasonable period of training by various types of students, sufficient for preparation to begin independent practice or for special graduate training, is limited. Moreover, knowledge of many factors in disease and health conservation should greatly simplify certain aspects of medical teaching which in the past were subjects for speculation, empiricism, dogma and divisions of opinion. It is becoming more evident that for most students the basic course should be confined primarily to the methods and general principles of the medical sciences and to a sound training in the pertinent fundamentals of general medicine that body of knowledge which is roughly the common denominator of general and special practice.

Extensive lecturing and operative clinics for large groups are criticized by some although their use has been greatly reduced. It is the current belief that time can be more profitably spent in reading or in elective work and that lectures should be confined to the general exposition of the principles of given subjects and to suggestive correlation of the various fields of study rather than to the presentation of subject matter.

Another criticism is directed against the methods of presenting subjects, both in the medical sciences and in the clinical courses. It is felt by recent graduates and students particularly but not infrequently by teachers as well, that subjects are presented too much from the standpoint of the individual interest of the teacher or department, and too much from the aspect of technical details rather than principles. This applies not only to the med-

Tannic Acid	} Equal parts, drachms 2 to one quart of water
Zinc Sulphate	
Boric Acid	} Equal parts, drachms 2 to one quart of water
Alum	
Zinc Sulphate	

Alkaline douches are not usually indicated as the secretions, in the majority of cases, are alkaline

Suppositories sometimes prove useful. An astringent douche should be used preceding the insertion of the suppository. The suppository should be inserted before retiring, the patient using a sanitary napkin and a cleansing or astringent douche should be used the following morning. Mercurochrome (1% to 2%) Ichthiol (5% to 10%) are frequently used in the form of a suppository. Applications to, or cauterization of, the cervix are contra-indicated because of the possibility of inducing abortion.

2 *Pruritus*—This condition may be general or local. General pruritus is believed to be a neurosis, probably toxic in origin. In severe cases the constant irritation with loss of rest may produce a general exhaustion. Bland diet, occasionally only milk being allowed, sedatives such as the Bromides, Luminal, or the Barbitals group are indicated.

Pruritus vulvae—There are numerous causes of this condition, the principal being, irritating vaginal discharges, seat worms, Trichophyton infection and occasionally glycosuria. Little need be said about the last. Elimination of the glycosuria causes cessation of the pruritus.

3 *Seat worms*—An enema of infusion of Quassia or Santonin grs 5 at night followed by a saline cathartic in the morning usually controls this condition. Trichophyton infection requires antiseptic ointments. The largest group by far are those cases secondary to irritating vaginal discharges. In addition to treating the leucorrhea it is necessary to use soothing lotions or ointments. Phenol Oil of Cade, Cocain, crude coal tar, Ammoniated Mercury have all been advocated in ointment form. White wash soda bicarbonate solution and Tr Benzoin have been used with success.

Gentle cleansing with a mild soap using pledgets of cotton and careful drying should precede the application of the ointment or lotion. Dusting with Aristol or Compound Stearate of Zinc after cleansing is advocated by many authorities. If the condition is severe a sedative may be required for a short time. In the presence of persistent, irritating vaginal discharge the insertion of a medicated pledget of cotton between the labia with frequent changing may allay the irritation. Quartz lamp therapy has yielded results in cases which have persisted despite other methods of treatment.

4 *Hemorrhoids*—Constipation and straining are predisposing factors—Elimination of these is often all that is necessary. Recumbent or knee chest position helps. The application of fluid extract of witch hazel or replacement of

the hemorrhoids with a well lubricated gloved finger sometimes affords relief.

Various astringent and anodyne ointments and suppositories are used. Quinine and Urea Hydrochloride is being used by many in ointment form to replace the opium in the old "gall and opium" suppositories. If one or two hemorrhoids are present injection of each with 1% Quinine and Urea Hydrochloride will often result in great relief. Operation is contra-indicated.

Questions of a similar nature to the above will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

BOSTON MEDICAL LIBRARY

RABIES

THE necessity for restraining dogs on account of the very considerable increase in the incidence of Rabies in this state during the year 1927 has not been appreciated by the public at large. Many people are disbelievers in the existence of such a disease or that it may be passed on from animals to man. Others feel that because no one they know has been bitten that the menace is greatly exaggerated. Still others are sympathetic with the poor dogs who have to be put under restraint, and simply give them a little liberty. A very large number being lazy and selfish are loath to give up the time to exercise the animal and openly defy the authorities. Something of the history of the knowledge of this disease is here displayed and it is hoped that any who are in doubt as to their duty in respect to the observance of the order of the State Board of Health will find herein reasons which will convince them of the wisdom of the regulation. Whether convinced or not there is no question as to where one's duty lies. Those to whom the state entrusts its Public Health problems, from their knowledge and information are the only ones in a position to know what the real situation is and plan most efficiently ways to meet the emergency and to them is due our loyal cooperation.

Bearing on this subject one of the exhibits is an address in manuscript read by a clergyman in Newburyport some years ago dealing with Rabies in skunks. Evidently even at that time physicians alone could not convince the public of something of which they did not wish to be convinced. The complaining, quasi-belligerent and questioning attitude of considerable numbers of the public who, for one reason or another, do not wish to believe in the efficacy of quarantine in controlling the spread of disease, can do more to negative the efforts of Boards of Health in these matters than almost anything else. It is hoped that physicians who see this

needs of medical practice are of a preventive character. The educational features of the hospital period need to be developed more fully and evidently greater use should be made of the outpatient service for teaching purposes.

PRE MEDICAL EDUCATION

The minimal premedical college requirements, particularly as to courses and time, have been rather rigidly enforced so that at the present time this training is quite uniform in regard to courses, although the quality of work done by students in different colleges varies greatly. As in the medical course, there is considerable criticism of the attempt at standardizing this pre-medical training on the basis of courses and credits and that here as elsewhere in education too much emphasis is placed upon mechanical timekeeping. In a general way the functions of the premedical courses are to familiarize the student with the methods of study and the philosophy of scientific effort, to assist in developing a broad cultural background, to acquaint him with the principles of the sciences upon which medicine, in part, is dependent and to encourage the development of independent initiative and intellectual self-reliance. The selection of students for medicine should be based upon the evidence of the extent to which these general accomplishments have been attained and on the basis of the character, personality, industry and promise of the individual.

Mention has been made earlier of the criticism of the length of the medical training. With the large numbers of students now applying for admission to schools of medicine however it is not likely that medical schools will lower their prerequisites below a standard on which they can fill their classes. The effect on the probable future number of physicians in the country of the reduction in the number of medical schools and of student body was presented in our preliminary report.*

One of the largest problems in medical practice is that of keeping physicians abreast of new medical knowledge and methods of diagnosis, treatment and prevention. Within recent years, a large number of different devices have been developed to bring current knowledge to medical practitioners. A number of medical schools have taken an active part in the program of post graduate medical training and forty-one schools for graduate training have been approved by the American Medical Association. The motive back of much of this training has been the desire on the part of many practitioners to get into a limited or nearly limited type of special practice. One of the largest problems of post graduate medical education has been the determination of the qualifications upon which special graduate training should be given, for it is clear that a considerable number of physicians who have been in practice for a period of years are inadequately qualified to take up special training in the short courses that are so frequently provided. Another demand for post graduate work is from those who are already in the specialties and who desire to keep abreast of current developments in their own field. Still another group are those who are in general practice and who desire to familiarize themselves with current accepted methods of laboratory diagnosis and various special forms of treatment. No great problem is presented by the recent medical graduates who after a hospital or laboratory training desire to go forward into some special phase of medicine for the training is merely continued.

There can be little doubt but that properly trained specialists are essential to the modern practice of medicine. In fact, to them must be credited no small part of the advances which have occurred in

medical knowledge and practice in recent years. It is recognized, however, that many specialists are self-named, many are not fully trained even in their limited field and still less well equipped in the broad fundamentals of medicine some are frankly commercial. In spite of the criticisms against individuals, specialism as such is likely to continue to grow, but will gradually become more intimately articulated with the medical needs of the community and more closely cooperative with general medicine and surgery. Current medical knowledge is so enormous that no one individual can possibly master all the technical methods of diagnosis and treatment required by certain patients and a division of labor is inevitable. It is important that the special fields of practice shall not be isolated and self-sufficient and probably this can be accomplished best by having specialized training based only upon a broad foundation of general medical knowledge. It is becoming more fully recognized that the health needs of the public can be met most satisfactorily by a balanced cooperation between physicians trained in and practicing general medicine and specialists whose training has qualified them for certain technical procedures required by some patients.

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY
Foster S Kellogg, M.D. Frederick L Good, M.D.
Chairman Secretary
Frederick J Lynch, M.D., Clerk

Treatment of Leucorrhœa, Pruritus and Hemorrhoids Complicating Pregnancy

Among the most common, and not the least annoying, complications of pregnancy are leucorrhœa, pruritus and hemorrhoids. Inasmuch as none of these are apt to result fatally they are often allowed to go untreated with the result that the patient undergoes many hours of suffering which might have been avoided and comes to the termination of pregnancy nervously unstrung, and unfitted, physically, for the test of labor.

1 *Leucorrhœa*—This complication may be mild or severe. The mild case needs little or no treatment. The severe case may resist almost all methods of treatment, but it can be controlled. In most cases the discharge is the result of an endocervicitis but occasionally we may find an associated vaginitis. Treatment consists of frequent careful douches, medicated suppositories, scrupulous cleanliness, and various measures aimed at improving the general health.

All external cleansing should be performed with pledgets of cotton, using a glycerin or superfatted soap. Sitz baths using hot water for fifteen minutes, twice daily, will do much to diminish pelvic congestion. Any douche should be given carefully with the patient sitting, the bag not over two feet above the level of the hips, with no interference to the return of the solution. Astringent solutions seem to yield the best results. The following formulae are recommended by various authorities.

*Preliminary Report of Commission on Medical Education January 1927 Ch. V

- 24 Calkins, G N., Bullock, F D and Rohdenburg, G
The effects of chemicals on the division rate of cells with especial reference to possible carcinogenic conditions J Infect. Dis 10 421 (May) 1912
- 25 Whipple G H Pigment metabolism and regeneration of haemoglobin in the body, Arch Int Med 29 711 (June) 1922
- 26 Fraser T R Bone marrow in the treatment of pernicious anemia Brit M J 1 1172 (June 2) 1894
- 27 Stoeltzner W Ein Vorschlag zur Behandlung der Biermerschen Anämie, München med Wchnschr 68 1558 (Dec. 2) 1894
- 28 Baker L E and Carrel Alexis Lipoids as the growth inhibiting factor in serum. J Exper Med 42 143 (July) 1925
- 29 Elders C The form course and prognosis of the anemia in Indian sprue and the etiology of pernicious anemia, Nederiansch. Tijdschr v Geneesk 58 2267, 1922
- 30 Footnote 22 third reference
- 31 Fenlon R. L A diet for pernicious anemia, J Iowa State M Soc 11 50 (Feb) 1921
- 32 Details concerning this diet with sample menus are given in a paper to be published soon in the New England Journal of Medicine
- 33 These changes in the blood and numerous others will be presented in a subsequent paper
- 34 Cabot, R. C Pernicious anemia, in Osler and McCrae's Modern Medicine ed 2 Philadelphia Lea and Febiger 4 1915
- 35 Krumbhaar E B Late results in splenectomy in pernicious anemia. J A. M. A. 67 723 (Sept. 2) 1916
- 36 Milnot, G R. and Lee R. I Treatment of pernicious anemia especially by transfusion and splenectomy Boston M & S J 177 761 (Nov 29) 1917

Journal of the American Medical Association V 871, Aug 14 1926, pp 476-482

The Relation of Anemia Primary and Secondary to Vitamin A Deficiency (From the Otho S A. Sprague Memorial Institute and Department of Pathology University of Chicago)

By Karl K. Koessler Siegfried Maurer and Rosemary Loughlin

REFERENCES

- 1 Kahn M C and Torrey J C A pernicious anaemia like blood condition produced in monkeys with B Weichii Toxin Proc. Soc Exper Biol and Med 22 813 1925
- 2 Hanke M T and Koessler K. K. Studies on Proteinogenous Amines XII The production of histamine and other imidazoles from Histidine by the action of micro-organisms J Biol Chem. 50 131 191 (Jan) 1922
- 3 Iwao Toku Beiträge zur Kenntnis der intestinalen Autointoxication Biochem Zeitschr 59 436 1914
- 4 Hanke M T and Koessler K. K. Studies on proteinogenous Amines XVII On the faculty of normal intestinal bacteria to form toxic amines J Biol Chem 59 835-855 1924
- 5 Cited by Wells Chemical pathology ed 5 p 342 footnote 59 1925
- 6 Slevens Till kännedom om förekomsten of intestinalparasiter hos människan i Finnland Finska läk sällsk bandi 48 I 1906 quoted from Tallqvist Ztschr f. klin Med 59 1907
- 7 Hanke M T and Koessler K. K. Studies on proteinogenous amines XXI The intestinal absorption and detoxication of histamine in the mammalian organism J Biol Chem 59 899 903 (April) 1924

- 8 Cramer, W On vitamin underfeeding Brit. J Exp Path. 3 298 (Dec.) 1922 On the mode of action of vitamins Lancet, 1 1046 (May 26) 1923 Vitamins and the Borderland between Health and Disease, Lancet 1 633 (March 29) 1924
- 9 See, however, the recent critical review by Faber, Knnd The intestinal origin of pernicious anemia, Ann Clin Med 4 788 1926
- 10 Cramer (footnote 8 second reference)
- 11 Löwenberg W Ueber die pathologische Bacterien Ansdiedlung im Duodenum und ihre ursächlichen Factoren, Klin Wchnschr 5 548 551, 1926
- 12 Jolly, J Variations de Phenoglobine du nombre des globules rouges etc chez le rat blanc, Compt. rend Soc de Biol 66 136-139, 1909
- 13 Cramer W Drew A. B and Mottram J C On blood platelets Proc Roy Soc B 93 449-467, 1923
- 14 Price-Jones C J Path and Bact. 25 487 (Oct.) 1922, Guys Hosp Rep 74 10 (Jan) 1924

Dietary Deficiencies and Infection

Journal of the American Medical Association Feb 4, 1928 p 386

- 1 Grant, Agnes H., Suyenaga B and Siegman D E Am Rev Tuberc 16 628 (Nov) 1927 Grant, Agnes H Bowman J A. and Stegeman D E Ibid 16 642 1927
- 2 Griffith A. S Report of Royal Commission on Tuberculosis Final report, 1911 Part II, Appendix.
- 3 Watanabe Y Saikin Gaku Tasshi No 255, 1917 p 1
- 4 Watanabe Y Ibid No 268 1918 p 48
- 5 Cobbett, L Causes of Tuberculosis 1917
- 6 Glovne S R. and Page, D S Tubercule, 1921 ill 577
- 7 Glovne S R and Page D S J Path and Bact., 1923 xxvi 224
- 8 Simmonds N and Lange L Amer Rev Tuberc., 1923 vii 47
- 9 Lange L Ibid 1925 xi 241
- 10 Ornstein G G and Steinbach M M Ibid 1925 xli 712
- 11 Smith M I Tr Nat. Tuberc. Assoc 20th Annual Meeting 1924 274
- 12 Smith M I J Lab H. Clin Med 1926 xi 712
- 13 Grant, A. H Amer Jour Hyg 1926 vi 228

The Effect of Rachitic Diets on Experimental Tuberculosis in White Rats

II Vitamine D Deficiency as a Factor in Lowering Resistance

REFERENCES

- 1 Grant, A. H Suyenaga, B and Stegeman D E The Effect of rachitic diets upon tuberculosis I Amer Rev Tuberc 1927 xvi 628
- 2 Grant, A H and Goettsch, M The nutritional needs of nursing mothers VII Amer Jour Hyg 1926 vi 211
- 3 Grant, A H The seasonal variation in rickets (publication pending)

MISCELLANY

STREETS SAFER THAN HOMES

The Boston Post quotes statistics given out by the National Safety Council which apparently show that more men women and children meet accidental death in their residences than are killed in streets Burns scalds falls and asphyxiations were responsible for the deaths in homes The record of January 1928 showed 2 020 deaths in homes as compared with 1 760 due to motor vehicles

exhibit will urge laymen who need or desire information along these lines to consult the bibliography which will be published in the NEW ENGLAND JOURNAL OF MEDICINE within a week or so

Members of the Boston Medical Library who desire to purchase rare or unusual books on Medical subjects will be aided in locating and purchasing such books if they will let their wants be known to the Director or the Librarian

LIVER DIETS

During the week ending February 25th there was on exhibition in the Boston Medical Library such articles as indicated the activities, both clinical and laboratory, of those who have shown the importance of a high protein diet (liver diet) in the treatment of pernicious anaemia. There follows here a Bibliography on this subject, not by any means complete, but sufficient to enable one desirous of acquainting himself with the steps leading up to this promising development in treatment to cover the main features and complete for himself, if he so desires, a more extended bibliographic study

This collection of Literature deals with the dietetic treatment of Pernicious Anaemia and tends to show, if considered chronologically, the development of the therapeutic principle now being strongly emphasized in Liver Diets. From the first studies upon this disease the gastro intestinal phenomena have come in for a good deal of symptomatic treatment, but with a better knowledge of biologic chemistry and the role played by vitamins in the body economy, the direction of treatment in pernicious anaemia to the gastro intestinal symptoms is no longer merely an attempt to alleviate suffering but actually to affect a cure. Studies of the effects of toxic, biologic products of body metabolism upon the growth of tissue, the alteration in the size of blood corpuscles under the influence of varying conditions, the experimental effects of diets rich in certain vitamins upon the susceptibility of animals to infections against which they are unusually non-resistant, are all steps in arriving at the employment of a highly rich protein diet in combating the lesions of pernicious anaemia. A perusal of this literature will show that present day emphasis upon the importance of this dietary treatment is something that was foreshadowed by early clinical experience and has been brought to its present state of importance largely as a result of biochemical studies

BIBLIOGRAPHY

Dr George Minot Dr Wm P Murphy J Am Med Assoc V 87: pp 472-476

- 1 Habershon S O On idiopathic anaemia Lancet, 1 518 551 (May 9) 1863
- 2 Biermer Hält Zunächst einen Vortrag über eine von ihm öfters beobachtete eigenthümliche Form von progressiver perniciouser Anämie,

- welchs mit Capillaren Blutungen der Haut, Retina, des Gehirns, &c Cor Bl f schweiz, Aerzte 2 15 (Jan 15) 1872
- 3 Pepper W Progressive pernicious anaemia of anhaematosia, Am J Med Sc 70 313 (Oct.) 1875
- 4 Osler Wm Pernicious anaemia A system of practical medicine, edited by Pepper, W assisted by Starr, L Philadelphia, Lea Bros Co, 3 898, 1885
- 5 Fenwick, S On atrophy of the stomach in relation to pernicious anaemia. Lancet 2 77 (July 21) 1877
- 6 Naegeli, O Blut krankheiten und Blutdiag nostik, Leipzig, von Veit & Co 1912
- 7 Hunter W Observations on treatment of pernicious anaemia based on a study of its causation, Brit M J 2 1, 81 1890
- 8 Grawitz, E Zur Frage der entgegen en Entstehung schwerer Anämien Berl klin. Wechnschr 1 641 (June 17) 1901
- 9 Mosenthal, H The effect of forced feeding on the nitrogen equilibrium and the blood in pernicious anaemia Bull Johns Hopkins Hosp 29 129 (June) 1918
- 10 Menghini, quoted by Christian, H A. A sketch of the history of the treatment of chlorosis with iron Medical Library and Historical Journal 1 176 (July) 1903
- 11 Gibson, R B and Howard, C P Metabolic studies in pernicious anaemia Arch Int. Med 32 1 (July) 1923
- 12 Smith quoted by Fitch, W E Dietotherapy, ed 2 New York, D Appleton & Co 3 257, 1922
- 13 Barker L F and Sprunt, T P The treatment of some cases of so-called "pernicious anaemia, J A M A 69 1919 (Dec 8) 1917
- 14 McGarrison Robert Faulty food in relation to gastro-intestinal disorder, J A M A 78 1 (Jan 7) 1922 Benedict, F G Miles, W R, Roth, P and Smith H M Human vitality and efficiency under prolonged restricted diet, pub 280 Carnegie Inst of Washington 1919 p 364
- 15 Shakespeare Henry IV act 2 scene 3
- 16 Jencks, Z Studies in the regeneration of blood Am J Physiol 59 240 (Feb) 1922
- 17 Hammarsten, O A text book of physiological chemistry trans by Mandel, J A ed. 5 New York J J Wiley and Sons 1908 p 244
- 18 Morawitz, C and Kuhl, G Der Blutumstaz des normalen unter verschieden Bedingungen (Eisen Alsen Fleisch), Klin Wechnschr 4 7, 1925
- 19 Pearce R M Krumbhaar, E B and Frazier C H The spleen and anemia Philadelphia, J B Lippincott Company 1918
- 20 Smith A H and Moise T S Diet and tissue growth The regeneration of liver tissue during nutrition or inadequate diets and fasting J Exper Med 40 209 (Aug) 1924
- 21 Hirasawa, quoted by Welis H G Chemical pathology, ed 5 Philadelphia W B Saunders Company 1925, p 334
- 22 Whipple G H Hooper, C W and Robscheit F S Blood regeneration following simple anemia Am J Physiol 53 151, 167 (Sept.) 1920 Whipple, G H Robscheit, F S and Hooper, C W Blood regeneration following anaemia, ibid 53 236 (Sept.) 1920 Liver, heart and skeletal muscles in diet. Favorable influence on blood regeneration in anemia, ibid 72 408 (May) 1925 (cf p 431) Iron reaction favorable, arsenic and germanium dioxide almost inert, in severe anemia ibid 72 419 (May) 1925
- 23 McCollum E V The newer knowledge of nutrition New York the Macmillan Company 1923

DEATHS IN THE REGISTRATION AREA IN
CONTINENTAL UNITED STATES IN 1925 AND 1926.

Cause of death	Number		Rate per 100,000 estimated population	
	1926	1925	1926	1925
All causes 1/	1,285,927	1,219,019	1,222.7	1,162.5
Typhoid and paratyphoid fever	8,828	8,287	6.6	8.0
Malaria	2,006	2,132	1.9	2.1
Smallpox	377	709	0.4	0.7
Measles	8,607	2,404	6.2	2.3
Scarlet fever	2,632	2,762	2.6	2.7
Whooping cough	9,317	6,948	8.9	6.7
Diphtheria	7,855	8,056	7.5	7.8
Influenza	42,809	30,638	40.7	29.6
Dysentery	2,921	3,257	2.3	3.2
Erysipelas	2,680	2,455	2.5	2.4
Lethargic encephalitis	1,499	1,630	1.4	1.6
Meningococcus meningitis	1,413	1,095	1.3	1.1
Tuberculosis (all forms)	91,568	89,258	87.1	86.6
Of the respiratory system	80,375	78,103	76.4	75.7
Of the meninges, central nervous system	3,788	3,745	3.6	3.6
Other forms	7,405	7,419	7.0	7.3
Syphilis 2/	16,456	16,332	15.7	15.8
Cancer and other malignant tumors	99,833	95,504	94.9	92.5
Rheumatism	4,219	4,093	4.0	4.0
Pellagra	3,854	3,344	3.7	3.2
Diabetes mellitus	16,801	17,385	16.0	16.9
Meningitis (nonepidemic)	3,219	3,415	3.1	3.3
Cerebral hemorrhage and softening	90,832	67,064	86.4	64.4
Paralysis without specified cause	5,732	5,920	5.5	5.7
Diseases of the heart	209,370	191,223	199.1	185.5
Diseases of the arteries, atheroma, aneurysm, etc.	23,696	23,090	22.5	22.4
Bronchitis	6,961	6,670	6.6	6.5
Pneumonia (all forms)	107,797	93,432	102.5	93.6
Respiratory diseases other than bronchitis and pneumonia (all forms)	9,202	8,675	8.7	8.6
Diarrhea and enteritis (total)	35,298	40,512	33.6	39.3
Diarrhea and enteritis (under 2 years)	28,374	32,450	27.0	31.5
Diarrhea and enteritis (2 years and over)	6,922	8,062	6.5	7.8
Appendicitis and typhlitis	15,761	15,618	15.0	15.1
Hernia, intestinal obstruction	11,734	11,166	11.2	10.8
Cirrhosis of the liver	7,591	7,549	7.2	7.7
Nephritis	105,352	99,320	98.3	96.3
Puerperal septicemia	5,518	5,697	5.2	5.6
Puerperal causes other than puerperal septicemia	9,640	9,618	9.1	9.3
Congenital malformations and diseases of early infancy	75,259	76,166	71.6	73.9
Suicide	13,410	12,496	12.8	12.1
Homicide	9,210	8,693	8.8	8.6
Accidental and unspecified external causes (total)	82,715	80,774	78.6	78.3
Burns (conflagration excepted)	6,487	6,575	6.2	6.2
Accidental drowning	6,061	6,456	6.3	6.3
Accidental shooting	2,593	2,670	2.5	2.5
Accidental falls	14,681	13,864	14.0	13.4
Mine accidents	2,825	2,643	2.7	2.6
Machinery accidents	2,224	2,330	2.7	2.5
Railroad accidents	7,026	6,778	6.7	6.6
Collision with automobile	1,556	1,266	1.5	1.2
Other railroad accidents	5,470	5,512	5.2	5.3
Street-car accidents	1,621	1,650	1.5	1.6
Collision with automobile	464	498	0.4	0.5
Other street-car accidents	1,157	1,152	1.1	1.1
Automobile accidents (excluding collision with railroad and street-cars)	16,671	17,571	17.9	17.0
Injuries by vehicles other than railroad cars, street-cars and automobiles 3/	1,507	1,716	1.4	1.7
Excessive heat (burns excepted)	643	1,355	0.6	1.3
Other external causes	17,573	17,475	16.7	16.9
All other defined causes	117,278	114,419	111.6	111.0
Unknown or ill-defined causes	18,706	17,805	17.8	17.4

1/ Exclusive of stillbirths

2/ Included tabes dorsalis (locomotor ataxia) and general paralysis of the insane.

3/ Includes airplane, balloon, and motorcycle accidents

RESUME OF COMMUNICABLE DISEASES IN
MASSACHUSETTS JANUARY, 1928

GENERAL PREVALENCE

The total reported incidence of communicable diseases for January was considerably higher than usual for this month

While only eighteen cases of poliomyelitis were reported, it sets a new high record for January. More cases of mumps were reported in January of this year than in any previous January in the history of the Department. Thirty-nine more cases were reported than in January, 1927, which at that time was a high record for the month. The January, 1928, incidence of measles was second only to 1926. The incidence of whooping cough was rather high.

The reported incidence of diphtheria, scarlet fever, typhoid fever, non-pulmonary tuberculosis, German measles and chicken pox was within endemic limits.

The reported incidence of pulmonary tuberculosis reached a new low record. Lobar pneumonia was also reported in fewer numbers than in any previous January. The prevalence of influenza was low according to reports.

RARE DISEASES

Anterior poliomyelitis was reported from Auburn, 1, Boston, 4, Bourne, 1, Cambridge, 2, Chicopee, 1, Everett, 1, Lowell, 1, Melrose, 1, Millbury, 1, Na tick, 1, Reading, 1, Salem, 1, Saugus, 1, Waltham, 1, total, 18.

Anthrax was reported from Haverhill, 1, total, 1. *Dog bite requiring antirabic treatment* was reported from Avon, 1, Boston, 22, Braintree, 2, Brockton, 2, Cambridge, 1, Chelmsford, 1, Holyoke, 2, Lancaster, 2, Lowell, 10, Quincy, 3, Revere, 2, Waltham, 2, Winthrop, 3, total 53.

Encephalitis lethargica was reported from Springfield, 1, Worcester, 1, total, 2.

Epidemic cerebrospinal meningitis was reported from Ashburnham, 1, Boston, 2, Chicopee, 1, Haverhill, 1, New Bedford, 1, Northampton, 1, Springfield, 1, Sutton, 1, Tewksbury State Infirmary, 1, Uxbridge, 1, total 11.

Pellagra was reported from Newburyport, 1, total, 1.

Septic sore throat was reported from Boston, 12, Cambridge, 2, Chelsea, 1, Dartmouth, 1, Fall River, 1, Framingham, 1, Newburyport, 1, Newton, 1, Northbridge, 1, Northfield, 68, Winthrop, 1, Worcester, 2, total, 91.

Smallpox was reported from Pittsfield, 1, Shelburne, 2, total, 3.

Tetanus was reported from Lynn, 1, New Bedford, 1, Peabody, 1, total, 3.

Trachoma was reported from Boston, 2, Brockton, 1, total, 3.

Trichinosis was reported from Springfield, 9, total, 9.

MONTHLY REPORT OF CERTAIN COMMUNICABLE DISEASES

DISEASE	Cases in Entire Population			Epidemic Index	Case Rates per 100,000 Pop.		
	Jan. 1928	Jan. 1927	Proportion Index		Jan. 1928	Jan. 1927	Expected Rate***
ALL CAUSES	13,513	9,115	-	-	312.4	213.5	-
Ant. Poliomyelitis	18	6	16*	1.1**	.4	.14	.4
Diphtheria	485	461	573*	.8**	11.2	10.8	13.2
Measles	5,518	719	2,844*	1.9**	127.6	16.8	65.8
Pneumonia, Lobar	521	592	661*	.8**	12.0	13.9	15.3
Scarlet Fever	1,508	2,150	1,240*	1.2**	34.9	50.4	28.7
Tuberculosis, Pul.	372	404	332*	1.1**	8.6	9.5	7.7
Typhoid Fever	28	36	24*	1.2**	.6	.8	.6
Whooping Cough	1,271	641	862*	1.5**	29.4	15.0	19.9
Chicken Pox	1,320	1,729	-	-	30.5	40.5	-
German Measles	104	62	-	-	2.4	1.5	-
Influenza	58	74	-	-	1.3	1.7	-
Mumps	1,311	1,272	-	-	30.3	29.2	-
Tuberculosis, O.F.	76	66	-	-	1.8	1.5	-

CANCER BILL IN NEW YORK

A bill has been introduced in the Assembly of the State of New York by Mr. Cuvillier providing for the establishment of cancer clinics.

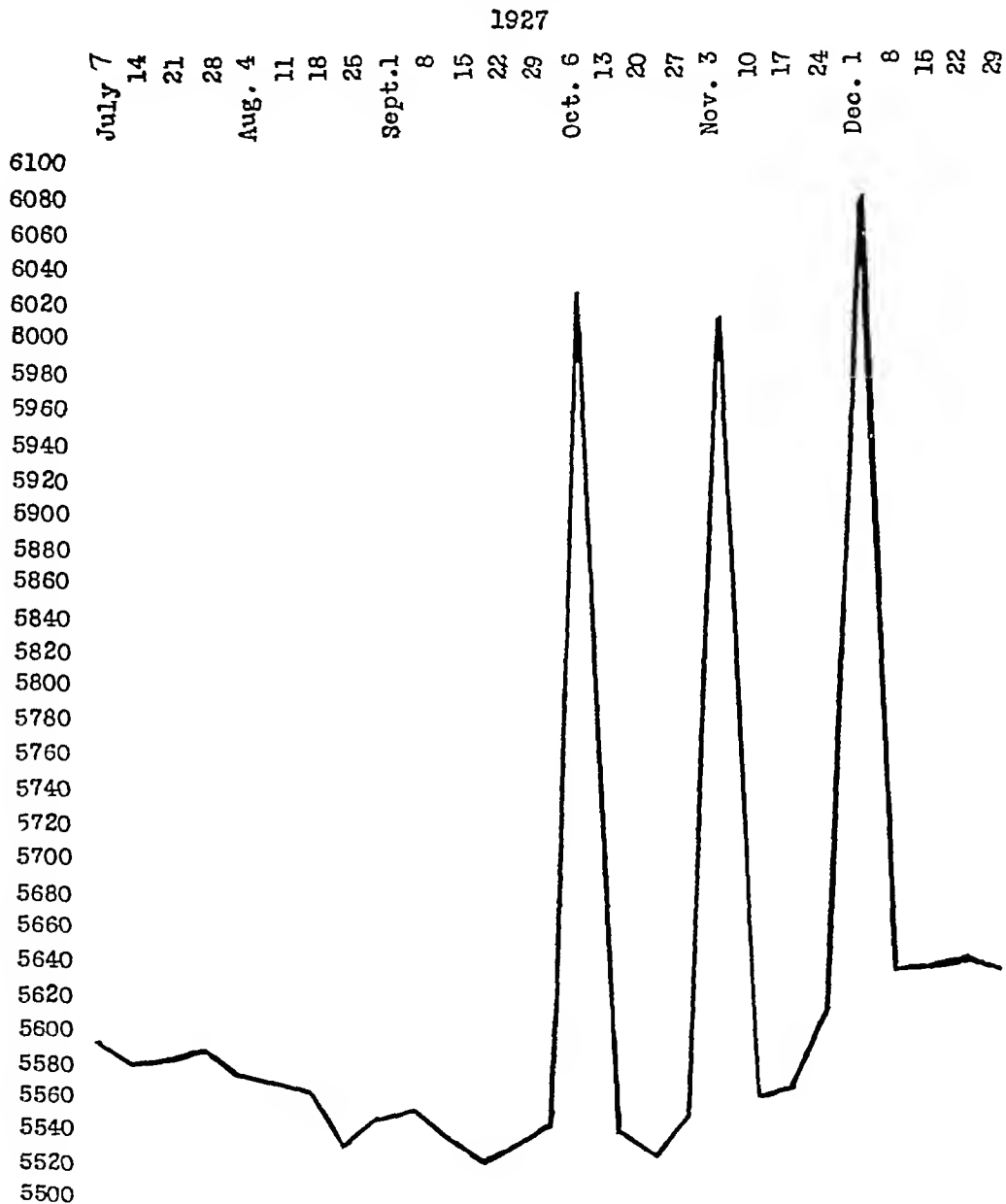
The State Commissioner of Health is given authority to establish one or more clinics in each county. Quarters may be voluntarily provided by county, city, town or village but if they are not so provided the Commissioner of Health may provide them. The director of each clinic to be appointed by the Commissioner after competitive civil service examination is to be a specialist in the diagnosis and treatment of cancer and is to receive a salary of six thousand dollars. Such physicians, surgeons and other assistants as may be necessary for the proper conduct of the clinic may be appointed by the Commissioner. Clinics when established are to be under

the control of the director of the State Institute for the study of Malignant Diseases subject to the approval of the Commissioner. Patients are to be admitted to the clinics for free diagnosis and such treatment as is available on the recommendation of a registered physician. Radium treatment is to be furnished without charge. Medication is to be furnished at cost. Patients requiring hospital care are to be admitted to the State Institute for the study of Malignant Diseases and if indigent are to be transported there and back at State expense. The Commissioner shall furnish each clinic such radium and other equipment as the director may deem necessary. To carry out this program the bill carries an appropriation of \$5,000,000.

This bill is mentioned because it shows a trend of public thought.

A GRAPH SHOWING THE CIRCULATION OF THE JOURNAL

We are pleased to publish the accompanying chart which shows the JOURNAL circulation from July 1927 through December 1927. The high peaks show the increased circulation for those issues which have been sent to members of the New Hampshire Medical Society. Later we shall be able to show the circulation as affected by the Vermont State Medical Society.



WORCESTER NORTH CANCER CLINICS

Three new State-aided cancer clinics have been opened under the direction of a committee appointed by the Worcester North Medical Society. This committee consists of —

Dr F H Thompson, Fitchburg, Chairman
Dr C H Jennings, Fitchburg, Secretary
Dr A F Lowell, Gardner
Dr H R Nye, Leominster
Dr W F Sawyer, Fitchburg
These clinics are held at Fitchburg, Leominster and Gardner

The Fitchburg Clinic opened at 11 00 A. M., February 2nd at the Burbank Hospital. Most of the Medical Committee and a number of the Educational Committee were present. Of the sixteen patients that reported for diagnosis, one had operable cancer with a chance for cure, two were pre-cancerous, one post-operative cancer, one benign tumor, two deferred diagnosis and nine other conditions. Several patients were referred to the Out Patient Department of the hospital. The staff of the clinic consists of

MEDICAL STAFF

E J Tully, M D April May, June
F M McMurray, M D, Oct., Nov., Dec
F H Thompson, Jr, M D, Jan, Feb, March
J H. Jacques, M D, July, Aug, Sept

SURGICAL STAFF

W F Sawyer M D, Nov, Dec, Jan
A. P. Lowell, M D, Nov, Dec, (1927), Jan Aug, Sept., Oct (1928)
R. A. Morgner, M D, May June, July
G P Norton, M D, Feb, March, April
Note — Drs Sawyer and Lowell alternate services
Drs Morgner and Norton alternate services

EYE, EAR NOSE AND THROAT

J A Barton M D, March, April, May, Sept, Oct. Nov
J P Goray, M D, Dec, Jan, Feb, June, July, August.

X RAY

C H Jennings, M D

The Leominster Clinic opened at 11 00 A M February 14th at the Leominster Hospital. Fifteen patients attended. Members of the hospital staff were present. The staff of the clinic consists of

MEDICAL STAFF

W E Currier, M D Jan, Feb March (now serving)
C S Brigham, M D April May June
F C Shuttis M D July, August, Sept
C J Laserte, M D Oct, Nov and Dec

SURGICAL STAFF

H R Nye, M D Jan, Feb March (now serving)
M H Chrystal, M D April, May June
B P Sweeney, M D July August, Sept.
A A. Wheeler, M D, Oct. Nov, December

The Gardner Clinic opened at 11 00 A M, February 21st, at the Henry Heywood Hospital. It was a very interesting clinic with twenty seven patients many of which were serious cases. Three were found to have cancer seven pre-cancerous conditions, six deferred, one normal and ten others. Four were referred by doctors three by nurses and the remaining twenty as a result of newspaper articles. The full staff of the clinic consists of

DOCTORS ON SERVICE

Surgical, Senior

George Mossman, M D, Jan, Feb, July, Aug
Albert F Lowell, M D, May, June, Nov, Dec.
Herbert W Ellam, M D, March, April, Sept., Oct.

Surgical, Junior

Arthur G Heininger, M D, Jan, June, July, Dec.
Clifford S Lancey, M D, Feb, March., Aug, Sept.
Jesse C Hales, M D, April, May, Oct., Nov

Medical

T Roland Ekwall M D, Jan, Feb, March, April.
L S B Lundwall, M D May, June July, Aug
Fred B Colby, M D, Sept., Oct., Nov, Dec.

Obstetrical

James E Waters M D, Senior
F X. DuFault, M D, Junior

In addition each clinic has a full consultative staff made up of Boston as well as local physicians

These three clinics bring the total number of State-aided cancer clinics up to nine

COMMISSION ON MEDICAL EDUCATION

FEBRUARY 28TH 1928

Editor of THE NEW ENGLAND JOURNAL OF MEDICINE

President A Lawrence Lowell, Chairman of the Commission on Medical Education, has appointed the attached committees of the Commission to deal with certain groups of problems before it.

Sincerely,

WILLARD C RAPPLEYE.

COMMITTEE ON PRE-MEDICAL TRAINING

Chancellor Samuel P Capen, Chairman, University of Buffalo

Dean Henry G Gale University of Chicago

President Walter A. Jessup University of Iowa

President Clarence C Little, University of Michigan

Professor Leon B Richardson, Dartmouth College

COMMITTEE ON TRAINING IN THE MEDICAL SCIENCES

Professor Lafayette B Mendel Chairman Yale University

Professor John J R Macleod, University of Toronto

Professor Charles R Stockard Cornell Medical School

Professor George H Whipple University of Rochester Medical School

Professor Hans Zinsser, Harvard Medical School

COMMITTEE ON CLINICAL TRAINING

Dean David L Edsall Chairman, Harvard Medical School

Professor George Blumer Yale Medical School

Dean Hugh Cabot, University of Michigan Medical School

Professor Elliott Cutler Western Reserve Medical School

Professor George E deSchweinitz University of Pennsylvania.

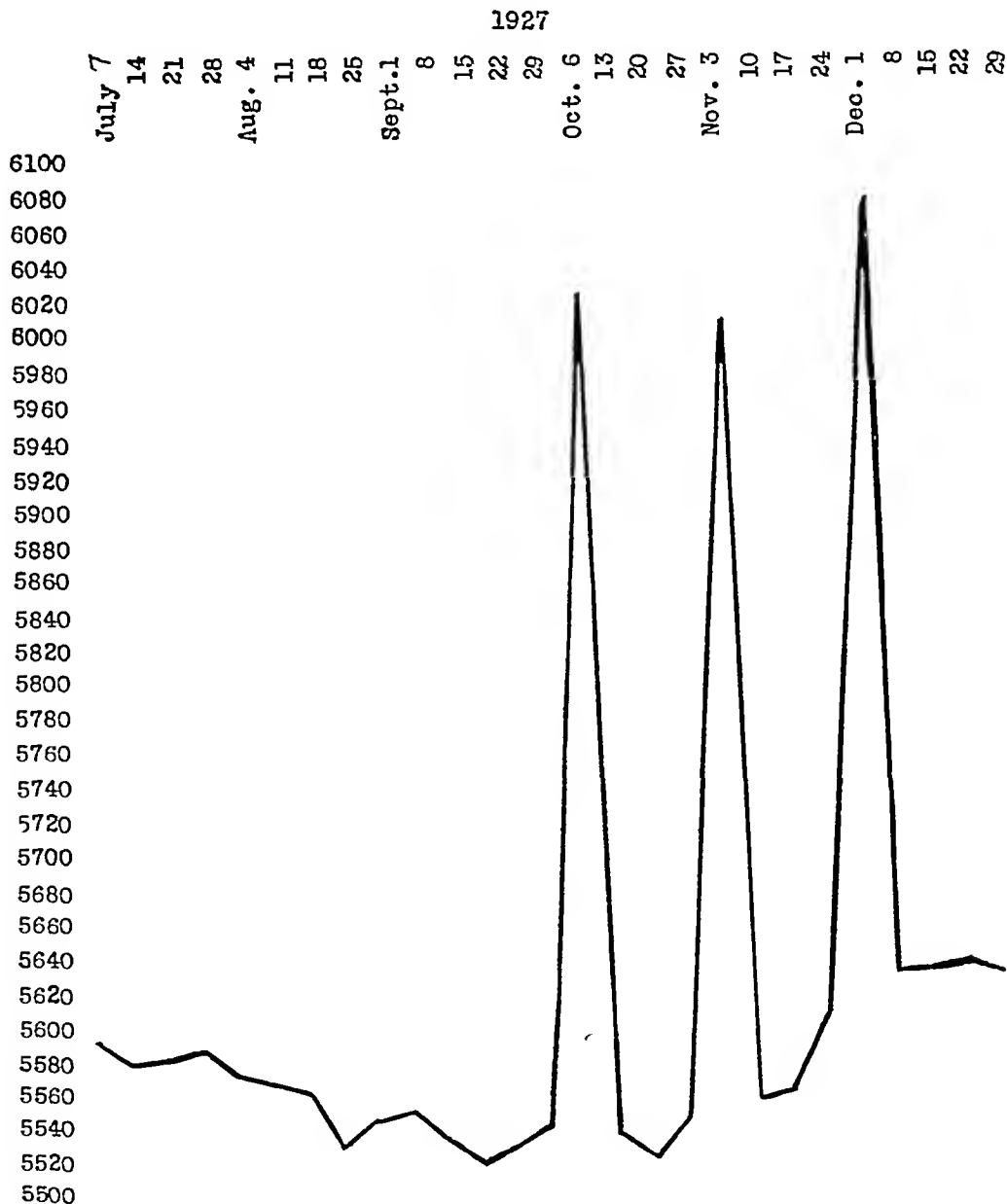
Professor Charles P Emerson Indiana University Medical School

Professor Benjamin P Watson Columbia University Medical School

Doctor Willard C Rappleye Director of Study of the Commission is Secretary of each of these Committees

A GRAPH SHOWING THE CIRCULATION OF THE JOURNAL

We are pleased to publish the accompanying chart which shows the JOURNAL circulation from July 1927 through December 1927. The high peaks show the increased circulation for those issues which have been sent to members of the New Hampshire Medical Society. Later we shall be able to show the circulation as affected by the Vermont State Medical Society.



REPORT OF INSPECTIONS* OF SCHOOLS OF CHIROPRACTIC AND NATUROPATHY IN THE UNITED STATES

Personal inspections have recently been made of all schools existing in the United States for the teaching of particular methods of treating human diseases. While a complete report of all information secured would hardly be justified, a brief résumé of conditions found in schools of chiropractic and naturopathy will be of interest to both physicians and laymen.

SCHOOLS OF CHIROPRACTIC

Chiropractic is said to have originated in 1895 with D. D. Palmer, a magnetic healer of Davenport, Iowa, and to have been 'developed' by his son B. J. It is in reality the older osteopathic concept very slightly modified and renamed. It was the enlarging of the osteopathic field and the lengthening of the osteopathic curriculum that gave chiropractic its opportunity, and the latter's rapid development has been due largely to the fact that it offered a shortcut to osteopathy.

According to this theory disease is due to vertebral subluxations which cause a pinching of spinal nerves between bones. This pinching interferes with the flow of 'Innate Intelligence' or vital energy to the body tissues. The spinal 'adjustment' alone restores that flow and restores health.

Chiropractic has had during its brief career of thirty-two years about one hundred and fifty schools. Forty of these are still active, many of them offering courses at night only and having a mere handful of students, more than half of the forty are so poorly housed and so inadequately financed that their future is problematic. B. J. Palmer, the 'developer' of the cult, recently said: "According to our records forty-eight chiropractic schools have closed their doors during the past two years." **

An entrance requirement of four years of high school study or its equivalent is claimed by the best of these forty schools. It is probable, however, that not one of them is enforcing the requirement. Mature age, business experience, ability to carry the chiropractic courses, or any convenient achievement is declared to be a satisfactory equivalent. A few schools give ridiculously short and easy high school quiz courses and certificates for which a special tuition fee is charged. This course in one of the best chiropractic schools† occupies two evenings weekly for six months. But fifty per cent or more of these schools do not even claim to require a high school education.

The courses offered in the majority of these schools run through three school years of six months each. They are poorly chosen, poorly arranged and very poorly outlined. The student may begin on any school day of the year and finish on the same day of the eighteenth month thereafter. There are no adequate records of amount or quality of work done. Going to school is a matter of 'doing time' and the student is given his doctor's degree as soon as the time expires. Legislation has forced a few schools to lengthen their courses to twenty-four or twenty-seven months. When this is done, the school usually shortens its working day to three or four hours as compensation and holds out to the student his ability to spend the remainder of his time earning his expenses. Also in almost any twenty-four or twenty-seven month school a stu-

dent may graduate at the end of eighteen months if he declares his intention to practice in a state requiring only that amount of study. A few schools require less than eighteen months and one of the most widely known gives only a home-study course that may be finished within three months.

The equipment invariably found in these schools consists of a few adjusting tables, students' chairs, and desks. Some have turned to physical therapy or naturopathy and installed a varying amount of electrical apparatus. A very few have x-ray machines, used (except in one instance*) in spirography. About eight of the forty schools have small chemistry laboratories, with equipment for the very simplest experiments only. Two or three have dissection laboratories. None of the forty schools have laboratories for physics, physiology, physiological chemistry, bacteriology, histology, embryology or pathology. Courses in these important laboratory subjects are either given by the didactic method or omitted altogether.

The clinics are not adequate for training in the recognition of even the most common disease. There is no adequate apparatus for the diagnosis of such diseases. The treatment procedures taught and practiced do not include the therapeutic measures of demonstrated value, and so the patient is left practically without either diagnosis or treatment. There are no hospitals to which patients in need of hospitalization are referred, and none in which students may study the progress of cases.

The facilities of these forty schools are made up of men of very poor educational qualifications. While a very few are both educated and shrewd, and an occasional doctor of osteopathy or even of medicine may be found among them, the great majority are not trained in any of the "medical sciences", the non-medical sciences, or the liberal arts. They are frankly out of sympathy with the organized medical and public health interests, and are openly antagonistic to many of the most universally recognized facts and procedures of civilized life.†† They circulate, by word of mouth and through the school literature, greatly misleading statements about the chiropractic 'profession', ambiguous testimonials concerning the cure of incurables, and wild claims about the schools themselves which a most superficial investigation proves to be without foundation in fact.‡

3 SCHOOLS OF NATUROPATHY

While a venerable old age is claimed for naturopathy, its development has really been more recent than that of chiropractic. Its chief exponent Benedict Lust of New York claims that he organized the parent school in 1896 but even so ancient an origin as that is improbable.

The cult seems to have no basic idea but to be rather a nature-cure hodgepodge with a decided antipathy to drugs. In fact naturopathy has developed in part as an effort to broaden the scope of chiropractic. There are about five schools of naturopathy and all of them teach chiropractic. Several of the chiropractic schools teach naturopathy.

*The Pasadena College of Chiropractic reports that its students are taught x-ray therapeutics.

†For example: vaccination, typhoid immunization, specific medication, diphtheria, antitoxin, quarantine, focal infection, germ theory of disease, etc., etc.

††Thirteen of these schools have made affidavits to the American College of Chiropractors that the curriculum includes 36½ forty-five minute hours of work and on the basis of these affidavits have been rated by this college as class A schools and awarded diplomas of honor. Allowing for ten minute intervals between classes and five school days per week (considering that not a single holiday is allowed during the eighteen months of the course) this schedule would require more than eight hours of actual attendance daily a program which no school of any nature would attempt to follow. The American College of Chiropractors admits that none of these schools were inspected prior to their being rated and that none of their claims have been investigated since.

*Inspections were made during the summer and fall of 1927 by representatives of the Council on Medical Education and Hospitals of the American Medical Association. The schools included in these inspections are the schools of chiropractic, chiropractic naturopathy, optometry, osteopathy and physical therapy as well as a large number of miscellaneous institutions.

*Article "The Great Undertow"

†National College of Chiropractic, Chicago

Probably fifty or even seventy five per cent. of the practicing naturopaths have been recruited from the ranks of chiropractic and the two cults have always been on the friendliest terms *

Entrance requirements are said to include four years of high school study or its equivalent but none of the schools of naturopathy really enforce this rule. Records are not kept the student's word is taken in the matter and if he is so thoughtless as to confess that he lacks the high school requirement the matter is either forgotten or patched up with as little embarrassment as possible. One school offers a night course in which the deficiency may be made up (extra tuition being charged for this service) but admits that the requirement has never been enforced.

The courses run through twenty four or thirty six months with a short school day and an evident carelessness regarding attendance. It is probable that only one school has day-classes. These institutions show a marked tendency to have students attending two or more schools simultaneously. One school for example which claims to operate under about twenty different names offers 'a liberal reduction to students taking four or more courses (schools) at the same time. Another tried to enroll the inspector in two schools' at once when fifty per cent. of the sessions of one conflicted with the sessions of the other. One school counts attendance in each class twice—once for naturopathy and once for chiropractic—and so claims to pile up 6000 class hours (thirty minute periods) of study thus qualifying under the new Florida law this school gives every student two diplomas and many students three or more, each diploma bearing a different name for the school. No outline of the courses offered is published by any of the schools of naturopathy.

The subjects include symmotherapy, gynecokinesis zone therapy physiontopathy, astrological diagnosis practical sphincterology, phrenological physiology spectrochrome therapy, iridagnosis, chiropractic diet hydrotherapy osteopathy physiotherapy electrotherapy mechanotherapy heliotherapy tension therapy naprapathy neuropathy physical culture and many others.

The equipment in these schools differs little (if at all) from that found in schools of chiropractic except that a small amount of electrical apparatus is usually found, and adjusting tables are not quite so much in evidence. A small chemistry laboratory is usual that of the 'parent school' in New York has room for two or possibly three students but has not sufficient equipment for so large a number to perform the same experiments at the same time. There are no laboratories for physics physiology, physiological chemistry anatomy, bacteriology histology, embryology or pathology.

The clinics are even less adequate than those of the chiropractic schools. No school of naturopathy has a hospital associated. The therapeutic procedures include chiropractic osteopathy hydrotherapy electrotherapy diet and a wide range of so-called 'natural methods'.

The faculties of these schools are composed of untrained men many of whom have been recruited from the schools of chiropractic. Their educational qualifications are so like those of teachers of chiropractic that no further statement is necessary. That such instructors should train students in the proper use of so wide a variety of therapeutic measures, and do it within the short time allotted is obviously impossible.

GENERAL DISCUSSION

In such a brief report many matters of interest must be entirely omitted and many others no more

*The chiropractor may easily become a naturopath by taking a three month 'post graduate' course in one of the naturopathic schools.

than mentioned elaboration though a constant temptation is one which brevity forbids. But to one who is familiar with the elaborate equipment and curriculum found necessary to proper training in the science and art of healing today the most impressive thing about these naturopathic and chiropractic schools is not what they are but what they are not. A few statements from this point of view will properly close the report itself and also form an appropriate prelude to the list of schools following.

- 1 Of the fifty active schools listed, a few are mere 'branches' rather than separately existing institutions and these fifty constitute less than one-third of the number formerly existing.
- 2 All but a mere handful of these fifty existing schools are so poorly housed and so inadequately financed that their continuation is problematic.
- 3 Very few of these schools have even one adequately trained teacher on the faculty and there are probably less than five expert all time teachers in the entire lot of fifty institutions.
- 4 Not one of these schools actually enforces a matriculation requirement of even five minutes of high school study.
- 5 Not one of the fifty schools gives so much as one worthy laboratory course or has one worthily equipped laboratory.
- 6 Not one of these schools conducts a clinic in which a wide variety of the common diseases may be studied.
- 7 There is not one clinic equipped with the trained personnel or the scientific apparatus for the clinical diagnosis of a variety of the common diseases nor having a laboratory equipped for checking such clinical diagnosis.
- 8 There is not one clinic equipped for the proper treatment of patients suffering from such diseases.
- 9 There is not one of these schools whose students or whose faculty may enjoy the privilege of practice or even of observation in any worthy hospital.
- 10 There is not one of these schools that does not proceed on the basis of unproved theory, ignoring the lack of endorsement by all worthy educational institutions.
- 11 There is not one of these schools that does not ignore or even avowedly oppose the scientific point of view and the facts of medical science accepted by the authorities of the entire civilized world.
- 12 There is not one of these schools that does not owe its existence to the fact that it offers a short-cut to the practice of medicine.

SCHOOLS OF CHIROPRACTIC

California

- Berkeley Chiropractic College 2168 Shattuck Avenue _____ Berkeley
- Gale College of Chiropractic, 1406 West Seventh Street _____ Los Angeles
- Los Angeles College of Chiropractic, 918 20 West Venice Boulevard _____ Los Angeles
- Ratlidge System of Chiropractic Colleges 2415 South Western Avenue _____ Los Angeles
- West Coast Chiropractic College Inc., Fourteenth Street and Seventh Avenue _____ Oakland
- Pasadena College of Chiropractic, 1608 North Fair Oaks Avenue _____ Pasadena
- Clewell Chiropractic College 1574 Fourth Street _____ San Diego
- San Francisco College of Chiropractic, 1067 Market Street _____ San Francisco

Colorado

- Colorado Chiropractic University Fourteenth Street and Cleveland Place _____ Denver

District of Columbia

Chiropractic Research University, 1349 L
Street, N W _____ Washington

Georgia

Atlanta Chiropractic College, 286 West Peach
tree Street _____ Atlanta

Illinois

American University, 84 West Lake Street,
Chicago
National College of Chiropractic, 20 North
Ashland Boulevard _____ Chicago

Indiana

Evansville Chiropractic College, Inc., 501 Main
Street _____ Evansville
Ross College of Chiropractic, Inc., 1311 Web-
ster Street _____ Fort Wayne
Central States College of Chiropractic, 412-413
Kresge Building, 41 East Washington
Street _____ Indianapolis
Lincoln Chiropractic College, Inc., 518 North
Delaware Street _____ Indianapolis

Iowa

Palmer School of Chiropractic, 800 1100 Brady
Street _____ Davenport

Kansas

Colvin Chiropractic College, 237 South Main
Street _____ Wichita

Maryland

Maryland College of Chiropractic, 520 North
Charles Street _____ Baltimore

Minnesota

Minnesota Chiropractic College, Inc., 70 Willow
Street _____ Minneapolis

Missouri

Chiropractic University, Tenth and Campbell
Streets _____ Kansas City
Cleveland Chiropractic College, 1417 Linwood
Boulevard _____ Kansas City
Western College of Chiropractic, 2021 Inde-
pendence Avenue _____ Kansas City
Missouri Chiropractic College, 706 North Grand
Boulevard _____ St. Louis

New York

Carver Chiropractic Institute, 71 West Twenty
third Street _____ New York
Columbia Institute of Chiropractic, 111 West
Eighty third Street _____ New York
New York Eastern Institute of Chiropractic
124 West Seventy fourth Street _____ New York
Standard School of Chiropractic, 44 Fifth Ave-
nue _____ New York

Ohio

Akron College of Chiropractic 985 East Mar-
ket Street _____ Akron
Blodgett Chiropractic College 565 Rose Build-
ing 2062 East Ninth Street _____ Cleveland
Metropolitan Chiropractic College Inc 4501
Prospect Avenue _____ Cleveland

Oklahoma

Carver Chiropractic College 521 West Ninth
Street _____ Oklahoma City

Oregon

Pacific Chiropractic College Inc, 125 North
Grand Avenue _____ Portland

Pennsylvania

Doughty Marsh College of Chiropractic, 4201
Walnut Street _____ Philadelphia
National Chiropractic College, 2324 Columbia
Avenue _____ Philadelphia
Universal Chiropractic College, 1940 Fifth Av-
enue _____ Pittsburgh

Texas

Texas Chiropractic College, 602-606 West Myr-
tle Street _____ San Antonio

Washington

Seattle College of Chiropractic, 401-4 Lowman
Building, First Avenue and Cherry Street,
Seattle

SCHOOLS OF NATUROPATHY*

California

International School of Professional Arts and
Sciences, 860 Geary Street _____ San Francisco

Florida

Blumer College of Naturopathy, First Avenue
and Third Street _____ Miami

Maine

American School of Naturopathy, 28 31 Ham-
mond Building 12 Monument Square Portland

Minnesota

Great Northern University, Room 203, 2634
East Lake Street _____ Minneapolis

New Jersey

First National University of Naturopathy, 143
Roseville Avenue _____ Newark

New York

American School of Naturopathy, 236 East
Thirty fifth Street _____ New York

Pennsylvania

Naturopathic College, 27 Freeport Street _____ Aetna
Franklin Research University (School of
Naturopathy), 718 Spruce Street _____ Philadelphia
Naturopathic College and Hospital, 1333 North
Broad Street _____ Philadelphia
Naturopathic College 252 North Main Street,
Wilkes Barre

*Of the ten schools listed three are branches only and two
others were not active at the time of the inspection

DEATHS DUE TO SMOKE AND GASES

Samuel E Dibble Professor and head of the De-
partment of Plumbing, Heating and Ventilating at
the Carnegie Institute of Technology, claims that,
although the death rate has been reduced by the
control of water supplies, the pure food laws and
various public health activities that there is an in-
creasing death rate due to impure air

He believes that ninety per cent. of the house-
wives of the country are being 'gassed' in their
homes because of carbon monoxide which is pro-
duced by hot water heaters and gas stoves which
are not equipped with ventilating flues

Smoke from combustion of bituminous coal is an
other source of impure air

In referring to plumbing Professor Dibble claims
that much polluted air may be charged to poor
plumbing

He urges far more effective legislation which will
eliminate the dangers referred to

LEGISLATIVE NOTES

House 788, 789 and 790 have been granted leave to withdraw. The first required that all prescriptions be written in duplicate and contain a concise statement of the disease and the effect sought by the remedy prescribed. The second required that the ingredient be stated on a label on the bottle. The third required that the English name of the ingredient be given in any prescription.

The Committee on Public Health has reported a new bill House 1029, relative to the Examination of Persons engaged in the Handling of Food. It provides that the Commissioner of Public Health or local Boards of Health may require any person in tending to work or working in an establishment making or selling any article of food and whose duties pertain to the production or sale of food to submit to thorough examination when considered by the Commissioner or Board necessary for protection of the public health. The examination is to be made by a registered physician at the expense of the department or local board. The examination may include the taking of body fluids, secretions or excretions. The person examined may have his own physician present and may have additional samples examined at any laboratory approved by the department. The owner or operator of any establishment under penalty of a fine is forbidden to employ any person afflicted with or a carrier of any disease detrimental to the public health.

RECENT DEATHS

HATCHETT—DR. WILLIAM JOSEPHUS HATCHETT died at his home in Somerville March 7 1928 aged 72. He was a native of the Virgin Islands and a graduate of Bellevue Hospital Medical College in 1887 settling in Somerville that year and joining the Massachusetts Medical Society. He was a member of the Workingmen's Sick and Death Benefit Society, and of the A O U W. He is survived by his widow, a son and a daughter.

PETERSON—DR. CHARLES AUGUSTUS BURTON PETERSON, a Fellow of the Massachusetts Medical Society since 1892 died at his home in New Bedford March 9, 1928 at the age of 72.

He was a native of Philadelphia, studied at the University of Michigan, and took his M.D. at the Long Island College Hospital in Brooklyn in 1886.

His practice gravitated to eye, ear, nose and throat work until he devoted all his attention to it.

KENNEDY—DR. FREDERICK WILLIAM KENNEDY of Andover, a graduate of Harvard Medical School in 1883 and long a practitioner of Lawrence died at the Shawsheen Hospital in Andover March 4 1928 at the age of 70. Dr. Kennedy was born in London derry, N. H. and joined the Massachusetts Medical Society in 1884, resigning in 1914 when he retired from practice. He is survived by one son. Dr. Kennedy was a member of the first Board of Health of Lawrence.

OBITUARIES

PTOLEMY OMEARA EDSON M.D.

Dr. Edson long a resident of Roxbury and for many years a leading member of the medical profession of Boston died on February 13 1928, in his ninety fifth year after a brief illness of coronary embolism. He was born in Chester, Vermont, on December 27 1833. His father Dr. Ptolemy Edson was a well known physician throughout Vermont,

being in active practice till past eighty years of age.

The family came of straight English lineage the record being unbroken for four hundred and fifty years back to Thomas Edson of Adderbury, Oxfordshire who was born about 1480. The descent came through Mr. Samuel Edson who landed in Salem, Mass., in 1639 and settled in Bridgewater, Mass., in 1650. On his mother's side Dr. Edson came from Mayflower Pilgrim stock.

Dr. Edson prepared for college at the Appleton Academy, New Ipswich N. H., and was graduated A.B. from the University of Vermont in 1857. He read medicine with his father and with Dr. Perkins of the Castleton Medical School and entered the Harvard Medical School in 1859 having spent one year at the Medical School of the University of Vermont. He completed his full term of study at the Harvard School but as he lacked in the requisite term of study in that school and was anxious to get to work he took his degree of M.D. from the former in 1860.

In the Civil War Dr. Edson served as Asst. Surgeon in the First Vermont Cavalry from November 1861 to March 1864, when he was made Surgeon to the 17th Vermont Infantry. He was with the Army of the Potomac in all its battles and was cited for conspicuous service at Orange Court House August 2 1862. He was medical officer on Gen. Kilpatrick's Staff. At the close of the war he resumed practice in Chester and was chosen superintendent of schools.

In 1866 Dr. Edson moved to Roxbury where he lived until his death. He built up a large general practice and also took an interested and active part in public affairs. For many years he was attending physician to the House of the Good Shepherd and for five years was a member of the Boston School Committee. In educational matters he had broad and advanced views and advocated measures of reforms the fundamental importance of which is only now beginning to be appreciated.

His professional affiliations included membership in the Massachusetts Medical Society, Massachusetts Medical Benevolent Society, Boston Medical Library, Boston Obstetrical Society and charter member of the Roxbury Society for Medical Improvement. He was also an original member of the University Club of Boston. He was a companion of the Military Order of the Loyal Legion and had been commander of Post 26 G. A. R. He was always greatly interested in anything relating to the Civil War and had an extensive library pertaining thereto. He was a member of the First Religious Society in Roxbury, Unitarian. He was married in 1865 to Miss Mary A. Young of Bangor, Maine who died in 1922. Four children and three grandchildren survive him. His son Dr. Carroll E. Edson is a prominent physician in Denver, Colorado.

The subject of this sketch was a man with a strong upstanding personality. He held positive opinions upon all prominent topics of the time and had the ability and courage to defend them. He was dependable in all relations of life and occupied a high position in the community. He was abundantly endowed with that most desirable quality in a physician, good judgment, i.e. common sense. This trait was in evidence in the case of the breather that occurred in this vicinity many years ago. A strong man was thrown from a street car in taking a curve and struck on his head. He soon developed a respiration of over one hundred per minute that persisted for months. It was a unique case and was seen by several physicians who expressed various opinions. Dr. Edson insisted that the trouble was functional and that he would recover and he did.

Dr. Edson kept abreast with medical progress and was ready to adopt new methods that appealed to his judgment. For many years he carried on a

large practice over a wide area and was well and favorably known. Like so many members of our profession, he was not always mindful of the old adage, "a laborer is worthy of his hire!" He was too absorbed in his work to give necessary attention to the financial side of his career. He always had a large number of charity cases on his hands to whom he gave freely of his valuable services. He practiced medicine for nearly sixty years and was a typical general practitioner of the best sort. His patients were loyal to him over long periods of time, in some instances including three generations in each family. In his field of activities he strongly resembled Weelum MacLure, that physician in Drumtochtly so beautifully portrayed by Ian MacLaren in 'A Doctor of the Old School'.

Dr Edson lived a long and useful life. He did an immense amount of work and did it well. His memory will always be a source of satisfaction to his family, to his patients and to his friends.

GEORGE W. GAY, M.D.

DR. P. O'MEARA EDSON—AN APPRECIATION

Words can only express feebly what comes to our mind when we contemplate the well-rounded life of our colleague, Dr. P. O'Meara Edson. We must stop and try to consider the charm and strength of it as now completed by his recent death.

This Roxbury Society for Medical Improvement learns with sincere sadness of the passing of him who was its last original charter member. Full of years and loaded with the prizes of a most successful and honorable career, known far and wide for his exceptional professional ability, he served his day and generation (we may well say) both physically and mentally as a *giant* amongst his fellows in that position fast disappearing, known as 'the beloved family physician'. He served his state and nation as an Army Surgeon in the Civil War and that, during heroic days when such service entailed hardships that killed many of those not fortunate enough to possess an exceptional constitution, and even on those who survived because of their vigor it left the marital stamp.

Rugged, as his native Vermont hills was his defense of right and scathing in his attack on the wrong, sympathetic and helpful to the younger brothers in the professional service and generous in his dealings with all his fellows, no one could ever question or doubt where Dr. Edson stood or the value of his weight and influence. Commanding in face and figure, it was a daring patient who would ever disobey his orders. Those of us who knew his worth recognized that his judgment was the fruit of a long and wide experience, and that it was a rare individual who could ever hope to attain or emulate his wit and wisdom.

The intuitions of such a man were often more accurate than the conclusions of more elaborate findings. It may sound trite to say that he was 'unique' and that we can never forget the character of such a grand old man, but the fine record he has left behind him is a bright page in all our memories and an inspiration to all those who follow after him. Our Society has lost a member of heroic proportions, whose place none of us can ever hope to fill. He joins the noble dead! His mantle none of us can ever hope to wear!

For the Roxbury Society for Medical Improvement,
DR. H. WARREN WHITE.

HAROLD BURNLEY EATON

To Members of the Boston Society of Psychiatry and Neurology

In the death of Harold Burnley Eaton this Society has lost a valuable member of some years standing and the community has lost a neurologist of worth.

Dr. Eaton became interested in neurological and psychiatric subjects soon after his graduation from the Harvard Medical School in 1915. His hospital affiliations were successively with the neurological departments of the Carney Hospital, the Psychopathic Hospital, the Boston Dispensary, and finally the Massachusetts General Hospital, in all his institutional positions he was found to be a man who could be relied upon for intelligent action.

Perhaps his most outstanding work was during the Great War, in which he volunteered soon after the entrance of the United States. He saw active service at Chateau Thierry, the Marne-Aisne, St. Mihiel, and Champagne offensives, and was decorated on July 9, 1918, with the Croix de Guerre.

In his death on January 19, 1928, we lose not only a useful member of our profession, but a good friend.

Resolved, That this memorial be written into the records of this Society, published in the NEW ENGLAND JOURNAL OF MEDICINE, and a copy sent to his family.

(Signed)

E. W. TAYLOR,
J. B. AYER.

February 16, 1928

CORRESPONDENCE

DR. PTOLEMY O'MEARA EDSON

25, February 1928

THE NEW ENGLAND JOURNAL OF MEDICINE

Mr. Editor

May I have sufficient of your valuable space in which to express my admiration for the personal and professional qualities alike, of the late Dr. Ptolemy O'Meara Edson? Mine is no post mortem eulogy. The following verses were written and sent to him on the occasion of his ninetieth birthday.

What! Up to ninety? Carry on, my lad!
You'll go to par—or my judgment is bad
Your leg joints may creak like a blessed old Ford

But think of their mileage in work for the Lord!

Think, too, what you've done with your head and your hands

(You've just the sort a sick fellow demands)

So, I give you this toast in old raspberry shrub—

Our favorite beverage now in the Hub—

May the years from this on rest as light as a feather

And naught come to your 'joints' save the sunniest weather

If only we had the stout liquors of yore
I'd mix you up something besides metaphor

To this birthday greeting there came back the following answer, penned by a hand but little joggled by that ineffably ruthless disturber of motor equilibrium—Father Time

January 2nd 1924

Dear Doctor Courtney

If I could feel that I had gained the stature and girth pictured in your brilliant greeting of my ninetieth birthday I would allow no other 'ifs' to trouble my advance toward the century limit.

Your bountiful supply of metaphoric mixture as you are pleased to call it, has made needless any draught of the elevating dram of bygone days to lift me into the realm of self-esteem and joyful camaraderie.

Trusting that this declaration of my exaltation will tell you how grateful I am for your generous tribute and tendering all good wishes for a New Year with few ifs and hints, I am as always

Your sincere friend
P O'M Edson

By the death of Dr Edson, both the community and the profession lose one of the sanest, sturdiest and most resourceful of that fast-disappearing race of medical men known to the profession and public alike as General Practitioners

Our first, our last, cry off they hear
And, in between our groans
I can't believe the good they do
Is buried with their bones

JOSEPH W COURTNEY

PUBLIC HEALTH DIVISION OF THE MUNICIPAL REFERENCE LIBRARY

505 Pearl street New York City

January 13 1928

Dear Editor

It occurred to me that your attention may not have been called to a recent list of health books published by us We inclose a copy of this Public Health Number of the Municipal Reference Library Notes In it, you will find the books of the year on every phase of health work carried on in a city, classified for convenient use by physicians and nurses

We should be glad if special mention of the list might be made in the columns of your magazine
Appreciating your many courtesies I am

Very truly yours

SARA L HALLIDAY Librarian

GENERAL ADMINISTRATION

Good health and happiness J Ellis Barker
The principles of chemistry and their application Eleanor H Bartlett and Katharine Ink
Outlines in health education for women Gertrude Bilhuber and Idahelle Post
Dental education in the United States and Canada Carnegie Foundation for the Advancement of Teaching
Laboratory manual in medical bacteriology Columbia University College of Physicians and Surgeons
Health problem sources Marion Olive Lerrigo
Clinics hospitals and health centers Michael M Davis
Physical examination text for use by physical directors G G Deaver
Health work for girls S Maria Elliott et al
The new medical follies Morris Fishbein
How to make the periodic health examination a manual of procedure Eugene L Fisk and J Ramser Crawford
Month hygiene Alfred C Fones
A popular encyclopedia of health Lee K. Frankel and Donald B Armstrong
The cause and cure of speech disorders James S Greene and Emilie J Wells
The national government and public health James A Tohey
A guide to the history of physical education Fred E Leonard
The care of the face Oscar L Levin
City health administration Carl E McCombs
Criminal responsibility Charles Mercier
The organization and administration of playgrounds and recreation Jay B Nash

Recent advances in bio-chemistry John Pryde
A brief history of physical education, Emmett A. Rice

A practice of physiotherapy, C M Sampson
Dudley Allen Sargent, an autobiography
Calisthenics S C Staler
Social factors in medical progress Bernhard J Stern

Subject matter in health education Ruth Strang
The Fifth Avenue Hospital Clinics the Fifth Avenue Hospital

Better doctoring—less dependency Louise Stevens Brvant.

Medical care for a million people The United Hospital Fund of New York

New Clinics for old Michael M Davis and Anna M Richardson

Medical science for every day use Shields Warren
The new servant electricity in the home Mary O Whitton

CHILD HYGIENE

Cultivating the child's appetite
Child health and character Elizabeth M S Chesser

Child Life Investigations Eardley L Holland and Janet E Lane-Clarton

Feeding and the nutritional disorders in infancy and childhood Julius H Hess

The air we breathe James Kerr
Your nervous child Erwin Wexberg
Health supervision and medical inspection of schools Thomas D Wood

SANITATION

The fundamentals of school health, James Kerr
The principles of sanitation C H Kibbey
Hygiene and sanitation, George M Price
The smoke problem of great cities Napier Shaw and John S Owens
Hygiene and sanitation Jesse F Williams
Workers health and safety Robert M Woodbury

PREVENTABLE DISEASES

Cancer control American Society for the Control of Cancer

Surgical diseases of the gallbladder liver and pancreas and their treatment, Moses Behrend
Self-care of the diabetic for the use of diabetic patients J J Conyheare

An introductory course in ophthalmic optics, Alfred Cowan

Contributions to ophthalmic science William H Crisp and William C Finnoff

Ophthalmoscopy retinoscopy and refraction W A. Fisher

A year book of treatment and practitioners index International Medical Annual

The diabetic life its control by diet and insulin R D Lawrence

Pollomvelitis with special reference to treatment, W Russell MacAnisland

Diseases of the teeth their diagnosis and treatment, John A. Marshall

Evolution of preventive medicine Arthur News-holme

The carrier problem K. C. Paul
Therapeutics materia medica and pharmacy Samuel O L Potter

The conquest of disease Thurman B Rice
Preventive medicine and hygiene Milton J Rosenan

Should we be vaccinated? Bernhard J Stern
Modern Clinical syphilology, John H Stokes

The skin its care and treatment, Albert Strickler
A primer for diabetic patients Russell M Wilder et al.

A handbook of diseases of the stomach, Stanley Wyard

A textbook of bacteriology, with a section on pathogenic protozoa, by E E Tyzzer, Hans Zinsser

STATISTICS

A statistical survey of three thousand autopsies, William Ophuls Stanford University

An introduction to the theory of statistics, G Udry Yule

FOODS

Food costs and city consumers, Charles E Artman
Correct and corrective eating, Bernard Bernard
Practical dietetics for adults and children in health and disease, Sanford Blum

Some administrative problems of the high school cafeteria, Willard Stanley Ford, Columbia University

The chemical analysis of food Henry E Cox
Condensed milk and milk powder prepared for factory, school and laboratory, Otto F Hunziker

Food values, Louise M Keegan
The newer knowledge of nutrition, E V McCollum

and Nina Simmonds
Feeding the family, Mary S Rose

The foundations of nutrition, Mary S Rose
The care and handling of milk Harold E Ross

Chemistry of food and nutrition, Henry C Sherman
The story of bread, Elizabeth Watson

The story of milk and how it came about Elizabeth Watson
The dispensary of the United States of America

Horatio C Wood et al

NURSING

A text book of medicine for students in schools of nursing, A S Blumgarten

Nursing mental and nervous diseases from the viewpoints of biology, psychology and neurology Albert C Buckley

Drugs and solution for nurses, Stella Goostray
Principles of chemistry, Joseph H Roe

General nursing questions and answers Doris Tavler

DISLOCATIONS OF CERVICAL VERTEBRAE

Editor of THE NEW ENGLAND JOURNAL OF MEDICINE

In the discussion of Drs Osgood and Lunds article in the March 7, 1928, number, Dr Woodman of Franklin N H reports two cases which may well have been one sided dislocations of the cervical vertebrae. And leads me to call attention again to Dr G L Walton's studies of these conditions many years ago, and to his conclusions as to diagnosis and treatment. So far as I know his work has never been bettered, and constitutes a valuable contribution to the management of these cases. Walton suggests the following treatment for unilateral dislocations 'Perform retro-lateral flexion toward the side toward which the face is turned by the dislocation, then rotate back to place.'

I can testify to the success of these simple manipulations, when done under ether anaesthesia

FRANK M SHERMAN

11 Fairview Terrace,
West Newton, Mass

NEWS ITEMS

THE HARVEY SOCIETY—Dr George R Minot, Professor of Medicine Harvard Medical School will give the fifth lecture of the current series at the New York Academy of Medicine on 'The Treatment of Pernicious (Addison's) Anemia' Friday evening

TUFTS COLLEGE MEDICAL SCHOOL—The Medical School will be closed from twelve o'clock Saturday noon, March 31st, until nine o'clock Monday morning, April 9th, for the spring recess

SECOND ANNUAL CONFERENCE ON PUBLIC HEALTH—The Second Annual Conference on Public Health will be held at the building of the American Medical Association, 535 North Dearborn Street, Chicago on March 30 and 31, 1928

Official health agencies, including the United States Public Health Service, all state boards of health, and all important volunteer health organizations in the United States have been invited to be represented at this Conference. The topics for discussion will be Free and Part Pay Clinics The Health Demonstration and a Survey of Surveys

HARVARD MEDICAL AWARDS—It has been recently reported that students in the three upper classes of the Harvard Medical School have been awarded thirty-one scholarships carrying financial aid for the academic year, the scholarships having been awarded for excellence in work. The recipients are as follows

Herbert Dan Adams of Ogden Utah Weston Turner Buddington of West Mystic, Conn Henry Gisler Clarke of West Roxbury, Mass William Edwin Davis of Hicks Wharf, Va., Ira Milburn Dixon of Buffalo, N Y, Harold Henry Hamilton of Fulton, Mo, Albert Bradley Hodgman of Columbus, Ohio David Hurwitz of Roxbury, Mass Robert Jefferson Joplin of Cleburne, Texas, Alfred Kranes of Paterson N J John Hundale Lawrence of Springfield, S D, Gustaf Elmer Lindskog of Roxbury, Mass, Roy Elbridge Mabrey of Eldorado, Ill Milton Leonard Miller of Irwin Pa., Chauncy Valentine Perry of Cambridge, Mass Hildrus Augustus Poindexter of Philadelphia, Pa. Elwood Reid Rafuse of Parkdale N S Lloyd I Ross of Alliance, Ohio Nicholas Sarro of Seattle, Wash Lewis Sears of Norwich, Conn Charles Philip Sheldon of McLouth Kan Jibran Yusuf Skeirik of Lawrence Mass Harry Metcalfe Spence of San Angelo Texas Henry Joseph Stanford of New York City, John Dunham Stewart of Monroe S C Luther Milton Strayer, Jr, of Stratford Conn Horace Chilton Sweet of Brownwood, Texas David William Wallwork of North Andover, Mass Vernon Phillips Williams of Minneapolis Minn, and James Martin Woodall of Macon, Ga

REPORTS AND NOTICES OF MEETINGS

WORCESTER DISTRICT SOCIETY

A special meeting of the Worcester District Medical Society was held at the Chamber of Commerce on Thursday evening March 1 1928. A short business meeting at 6 30 was presided over by President Washburn. Following the business meeting dinner was served at the Hotel Bancroft

At 8 o'clock the members gathered again at the Chamber of Commerce and Dr Washburn introduced Dr George W Crile of Cleveland as the speaker of the evening. Dr Crile's subject was Factors Which Control the End Results of Operations on the Gall Bladder and the Thyroid Gland. The speaker described his own technique in the operation of cholecystectomy in which he uses an incision from the ensiform down the costal margin to the external border of the rectus muscle. This incision exposes the gall bladder plainly and does away with excessive manipulation of the gut and packing. The gall bladder is dissected from above downward after the cystic duct has been isolated and clamped. This procedure

eliminates a bloody field By avoiding excessive manipulation and packing Dr Crile believes that many of the usual post-operative symptoms are lessened Discussing thyroidectomies the speaker emphasized the necessity of considering the age, race, sex and general nervous stability of the patient Dr Crile said that it was much better to have a temporary hypo-thyroidism following operation than to have to operate the second time Dr Michael Fallon of Worcester discussed Dr Crile's paper

After a standing vote of thanks to Dr Crile, the meeting was adjourned at 9 30

UNION HOSPITAL IN FALL RIVER

CLINICAL STAFF MEETING

The Regular Monthly Clinical Staff Meeting will be held at the Stevens Clinic on Thursday, March 15 1928 at 8 15 P M

All physicians interested are cordially invited
M N TENNIS, M D
Secretary to Staff

THE NEW ENGLAND ASSOCIATION FOR PHYSICAL THERAPEUTICS

The next regular meeting of the New England Association for Physical Therapeutics Inc will be held Wednesday March 21st, at 8 p m at the Boston Square and Compass Club 448 Beacon Street, Boston Mass

There will be a Symposium on Thyroid disease and its treatment

Dr William Benham Snow New York City will read a paper on Consideration and Treatment of the Different Types of Goitre

Dr Robert L. Mason of the Lahey Clinic Boston will read a paper on The Classification and Surgical Treatment of Thyroid Disease

The papers will be discussed by Dr Fred W O'Brien Dr Charles A. Porter Dr Fred B Lund and others

All regular physicians welcome

A table d'hôte dinner will be served at 6 30 p m at the regular price

The Executive Council will hold a meeting at 6 p m

CLAUDE L PATZANT M D President
76 Boston Avenue Medford Mass

G W DICKINSON M.D., Secretary
89 Somerset Avenue Winthrop Mass

SOUTH END NEIGHBORHOOD MEDICAL CLUB

The next regular meeting of our Neighborhood Medical Club will be held at the office of the Boston Tuberculosis Association 554 Columbus Avenue Boston on Tuesday March 20 1928 at 12 noon

The speaker will be Dr Charles L Overlander Director of the Clinical Laboratory at the Brooks Hospital 227 Summit Avenue Brookline The subject will be Some Common Laboratory Methods of Diagnosis The usual luncheon will follow

At our last meeting the members voted that they would each donate the sum of \$3 00 yearly to cover the expense of our lunches and Dr John B Hall 60 Windsor Street Roxbury was appointed to receive the same

TRUDEAU SOCIETY OF BOSTON

The next meeting of the Trudeau Society of Boston will be held on Wednesday evening March 21 1928 at 8 15 p m in John Ware Hall Boston Medical Library, 8 The Fenway Boston

The speaker will be Dr Edward W Archibald of Montreal subject Selection of Patients for Surgical Treatment in Pulmonary Tuberculosis Dr Wy-

man Whittemore and Dr Edward D Churchill have been asked to lead in the discussion

Physicians medical students and nurses are cordially invited to attend this meeting

RANDALL CLIFFORD Secretary

SOCIETY MEETINGS

March 15—Union Hospital in Fall River Clinical Staff Meeting Detailed notice appears elsewhere on this page
March 20—South End Neighborhood Club Complete notice appears elsewhere on this page

March 21—New England Association for Physical Therapeutics Complete notice appears elsewhere on this page

March 21—Trudeau Society Complete notice appears on this page

March 30 and 31—Second Annual Conference on Public Health Complete notice appears on page 224

June 18 22—Convention of the Catholic Hospital Association Complete notice appears on page 1597 issue of February 16

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

May 2, 1928 (Wednesday)—Annual meeting at Haverhill, 12 30 P M at the Haverhill Country Club Brickett Hill Gile Street Haverhill

May 3 1928 (Thursday)—Censors meet for examination of candidates at Hotel Bartlett, 95 Main Street, Haverhill at 2 P M Candidates should apply to the Secretary J Forrest Burnham M D 567 Haverhill Street, Lawrence at least one week prior

Essex South District Medical Society

April 11 (Wednesday)—Essex Sanatorium, Middleton Clinic at 5 P M Dinner at 7 P M

Dr Raymond S Titus Obstetrical Emergencies
Discussion by Drs J J Egan of Gloucester and A. T Hawes of Lynn 10 minutes each and from the floor

May 3 (Thursday)—Censors meet at Salem Hospital for the examination of candidates at 3 30 P M Candidates should apply to the Secretary Dr R. E Stone Beverly at least one week prior

May 8 (Tuesday)—Annual meeting Detailed notice appears on page 1437 issue of January 26

Norfolk District Medical Society

March 27—Meeting at the Norwood Hospital Presentation of paper or cases from members of the District

May 3—Censors meeting Roxbury Masonic Temple 4 P M Applications will be mailed by the Secretary upon request

May 8—Annual meeting Details to be announced

Suffolk District Medical Society

Combined meetings of the Suffolk District Medical Society and the Boston Medical Library will be held at the Boston Medical Library 8 The Fenway at 8 15 P M., as follows

March 28—Medical Section The Use and Misuse of Vaccines. Dr Hans Zinsser Dr Francis M. Ractonmann Dr Charles H. Lawrence

April 25—Annual meeting Election of officers Paper of the evening to be announced later

The medical profession is cordially invited to attend these meetings

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear

BOOK REVIEWS

History of the Physiological Society during its First Fifty Years—1876 1926 by SIR EDWARD SHARPEY SCHAFFER Published as a Supplement to the *Journal of Physiology* December 1927 Cambridge University Press [vi + 198 pp]

The Physiological Society held its first meeting on March 31 1876 at 49 Queen Anne Street, London It was the earliest association of its kind in any country and the Society has accordingly jealously guarded its original designation as *The Physiological Society*—of London or of England being judiciously omitted At the first meeting Dr (later Sir)

John Burdon Sanderson was in the chair. There were also present Wm Sharpey, F.R.S., Thos H Huxley, F.R.S., Michael Foster, F.R.S., Geo H Lewes, Francis Galton, F.R.S., John Marshall, F.R.S., G M Humphry, F.R.S., Fk Wm Pavy, F.R.S., T Lauder Brunton, F.R.S., David Ferrier, P H Pye-Smith, Wm H Gaskell, J G McKendrick, E Klein, F.R.S., E A Schäfer, Francis Darwin, Geo J Romanes, Gerald F Yeo. It was proposed by Dr Foster, seconded by Mr Lewes, and carried "That an association be formed under the name of 'The Physiological Society' for promoting the advancement of Physiology and facilitating the intercourse of physiologists." In March, 1926, the Society completed its fiftieth year, but as negotiations for the acquisition of the *Journal of Physiology* were then in progress, the Jubilee celebration was deferred until May 13th, 1927.

Sir Edward Sharpey Schafer is the only original member of the Society still living who has retained active membership throughout its fifty-two years of existence and it is most fitting that he should be the historian. Sir David Ferrier, and Sir E Ray Lankester, though still living, are no longer members. Professor Sharpey Schafer has given a delightful account of the early meetings with small photographs and skilful verbal accounts of all of the more important members. The record of each meeting has been abstracted from the minute books, and the volume itself is equipped with an admirable index through which one can trace the activities of any of the members elected prior to 1926. On page 14 a photographic reproduction is found of the autographs of the original members. On a later page (opposite 176) a similar reproduction is given of the autographs of the eighty-five persons who attended the dinner on April 4, 1925, at Leiden. This was the first meeting of the Physiological Society to be held outside Great Britain.

The fact that the oldest physiological society in the world has only lately celebrated its fiftieth anniversary emphasizes the relative youthfulness of physiology as a science. It seems incredible that so much progress has been made in the course of this relatively brief period, and it would be impossible to estimate the enormous influence upon the development of physiology which this the parent society, has exerted.

The perusal of another edition of Doctor Stiles' small book will give everyone having a little knowledge of biology great pleasure. The book gives a large amount of well selected information about the action of the digestive system and nutrition. It is gratifying to find a frank acknowledgment of antiperistalsis as a normal colonic function in man. Expectation may be taken to the statement that the human colon resembles that of the carnivora as Canham writes that 'the colon of man is of the sacculated herbivorous, rather than the carnivorous type'. Several chapters are devoted to different phases of metabolism but relatively little consideration is given to the anabolic processes. The chapters on the hygiene of nutrition are especially illuminating. Some of the subjects discussed in this part of the book are the quantity of food, the peculiarities of protein, constipation, obesity, a comparison of the carbohydrates and fats, meat, tea and coffee, and the acid-base balance. The book contains a few simple though adequate illustrations, is well written, and contains a good index.

A Text Book of Practical Therapeutics By HOBART AMORY HARE B.Sc., M.D., LL.D. Twentieth Edition. Lea & Febiger, Philadelphia. 1927.

The fact that this book has reached the twentieth edition indicates that it has been a standard for many years. The first part deals with general ther-

apeutical considerations. Part two discusses the pharmacology of drugs and the third and fourth portions describe remedial measures other than drugs and the therapeutics of diseases.

In the section on drugs one looks in vain for allusion to the United States Pharmacopoeia X. There are a number of drugs that should be deleted from this edition. Throughout the author uses a terminology that one more commonly finds in older texts as 'depraved mucous membranes' and 'phthical tendencies'. To alcohol he attributes a 'distinct increase in the bacteriolytic power of the blood in disease', (p 78) based on some of the author's unconfirmed experiments. Bogan's important contributions on the blood determination of alcohol content in cases of alcoholism is not mentioned. Angina Pectoris is not mentioned under amylnitrite. Although the liver treatment of pernicious anemia is briefly presented elsewhere, we find the statement that "arsenic offers the best chance of benefiting cases of pernicious anemia." (p 118). Further on page 148 one finds that in exophthalmic goiter belladonna certainly gives relief in some cases, particularly if combined with strophanthin or digitals. Codeine is prescribed for diabetes "beginning at 1 or 2 grains and rapidly increasing it until the glycosuria is diminished. Sometimes as much as 20 or 30 grains or more may be given daily." p 243. On page 733 we read that 'by far the best means of maintaining hepatic activity in cases where this organ is torpid is horseback exercise, particularly if the exercise is taken on a trotting horse, as the jolting of the liver keeps the chain of digestive functions active and prevents the secretions from becoming clogged. One wonders where the source of the clinical evidence for many of the dogmatic statements emanated.

From the practical standpoint there are interspersed throughout the book points of utility mostly culled from the author's personal experience. To separate the chaff from the wheat is, however, beyond the scope of the ordinary student. Not only are the expressions antiquarian but they are lacking in acuity of conception. What was formerly the vade mecum of students and practitioners has now become outmoded.

BOOKS RECEIVED FOR REVIEW

- Crawford W Long and The Discovery of Ether Anesthesia by Frances L Taylor. Published by Paul B Hoeber, Inc. 237 pages. Price \$4.00.
- The Peaks of Medical History, by Charles L Dana. Published by Paul B Hoeber, Inc. 105 pages. Price \$3.00.
- Nutritional Physiology by Percy Goldthwait Stiles. Published by W B Saunders Co. 311 pages. Price \$2.25.
- Modern Baking Powder, by Juanita E Darrah. Published by The Commonwealth Press, Inc. 125 pages. Price \$1.00.
- The Harvey Lectures by Doctors Neufeld, Chambers, Michaelis, Erlanger, Collis, Willstatter, Jacobs. Published by The Williams & Wilkins Co. 164 pages. Price \$4.00.
- Troubles We Don't Talk About, by J F Montague M.D. Published by J B Lippincott Co. 248 pages. Price \$2.00.
- Pathological Physiology of Internal Diseases by Albion W Hewlett, M.D. Published by D Appleton & Co. 787 pages.
- Gynecology by Howard A. Kelly. Published by D Appleton & Co. 1043 pages.
- The De Lamar Lectures 1926-1927. Edited by Chas E Simon. Published by The Williams & Wilkins Co. 223 pages. Price \$5.00.
- Food Infections and Food Intoxications by Samuel Reed Damon. Published by The Williams & Wilkins Co. 266 pages. Price \$4.00.

The New England Journal of Medicine

VOLUME 198

MARCH 22, 1928

NUMBER 5

ORIGINAL ARTICLES

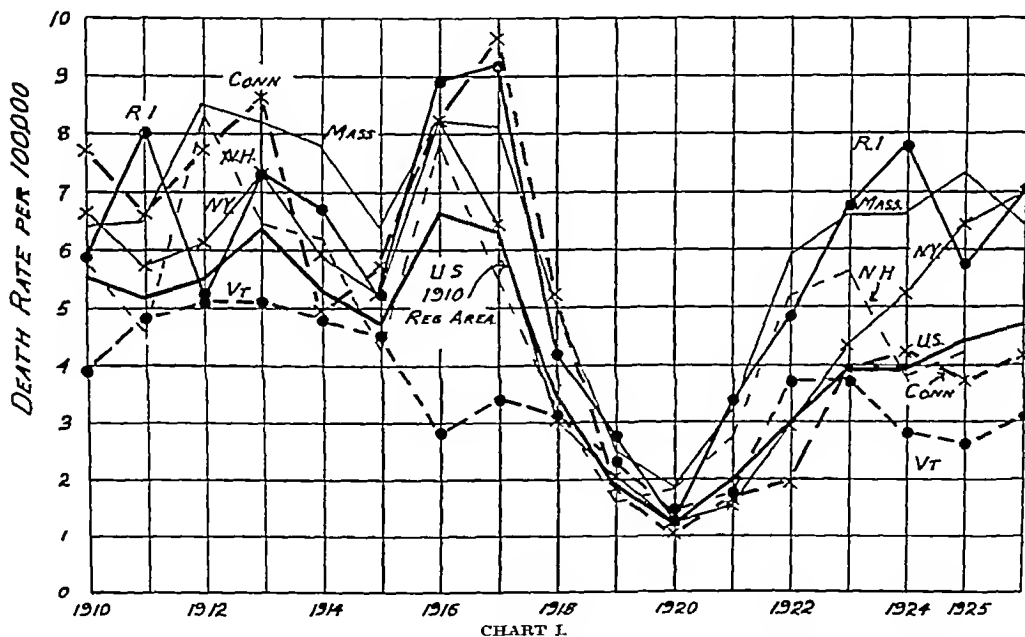
ARE "ALCOHOL DEATHS" DUE TO ALCOHOL?*

BY GEORGE H. BIGELOW, M.D.

THERE has been a very general increase in deaths attributed to alcoholism since 1920 (Chart I). This has been variously explained, some of the explanations seemingly being dictated by reason and some by emotion. The most commonly accepted perhaps is that expressed in

samples of liquor annually would show an increase in extraneous toxic substance since 1920. No such increase has been found as noted in the following report. But it is at least theoretically possible that with the methods used for preparation of illicit liquor and the multiple substances

DEATH RATE FROM ALCOHOLISM



a recent article from the Statistical Division of the Metropolitan Life Insurance Company ** "The rising alcoholism deathrate in this country since 1920 cannot, in our judgment, be explained by increased consumption of 'hard' liquor as compared with wartime and pre-wartime years. The reason must lie, we think, in the greater toxicity of the alcoholic liquors which are now used so generally throughout the country."

If this is the case we would expect that our laboratory analyses of a number of thousand

For record and address of author see "This Week's Issue" page 255

** The Rise in Deaths from Alcoholism among American Wage-earners since Prohibition. Statistical Bulletin. Metropolitan Life Insurance Co. Vol VIII, March 1927. No. 3

from which it is prepared, there might be introduced a new substance or combination of substances not detected in our routine chemical analysis but which might be highly toxic. Animal feeding experiments would detect this. Money was obtained from the Delamar Mobile Research Fund at the Harvard Medical School, and Dr. Reid Hunt with the assistance of Mr. H. W. George tested the toxicity of one hundred samples brought into the laboratory of the Department of Public Health by the police. His report is appended as well as a summary of the Department's work on this matter by Hermann C. Lythgoe, Director of the Division of Food and Drugs.

It is not part of the function of a health de-

partment to enter into the moral, legal or political aspects of the prohibition question except that we are quite improperly required by law to analyze thousands of specimens for the courts annually. But if there is a toxic substance in this liquor which comes from all parts of the State and which may and does kill, we are derelict if we do not so inform the public. The results of chemical and pharmacological examination suggest that as far as Massachusetts is concerned such factors as wood alcohol, methanol, furfural, and other extraneous substances have been very much exaggerated, and what is killing people now who die of alcoholism is what killed them back in the days of the high alcoholic death rates of 1916 and 1917 and before, namely, ethyl alcohol, "grain" alcohol, or "good pure" alcohol.

But this ethyl alcohol was also toxic in 1920 and why the increase in death rate since then? Perhaps in a certain group of the population, at

least, the drinking habits have materially altered. With the illegality and uncertainty of the supply there has been a tendency to "drink it while you've got it" so that a given quantity may more frequently be consumed in a shorter period of time, thus increasing the acute intoxication and deaths. Again, with the general practice of having the bootlegged liquor analyzed there may be a certain tendency to feel that when nothing more toxic than ethyl alcohol is found the product can be consumed with impunity. Also these studies would show as far as Massachusetts at least is concerned how groundless, in general, is the resentment against the enforcement agencies of the government for poisoning the liquor supply. Ethyl alcohol, then, is, has been, and always will be a poison which cannot be tolerated by the body in excess, and in the vast majority of cases "alcohol deaths" in Massachusetts are apparently due to excessive use of "good pure alcohol."

THE CHARACTER OF THE ILLICIT LIQUOR UPON THE MASSACHUSETTS MARKET*

BY HERMANN O LYTHGOE, S B

THE Massachusetts Department of Public Health is in the unique position of being able to obtain information as to the character of the illicit liquor upon the market because of the law which requires the Department to examine samples of liquor submitted by Police authorities for the purpose of determining the per cent of alcohol therein. This work was transferred to the Department in 1902, and the number of samples submitted varied from 100 to 200 per annum during the first seventeen years. In July, 1919, the number of such samples suddenly increased to 688 in that one month, and the number submitted at present varies from 8,600 to 9,400 per annum. During the 1927 fiscal year, there were submitted 8,815 such samples which were classified as follows: beer, 1929, cider, 84, distilled spirits, 4,529, flavoring extracts, 8, alcohol, 935, and miscellaneous, 421 samples.

The distilled spirits referred to included, in the order of quantitative occurrence, an occasional sample of aged liquor, more samples of the blended variety so common in pre-prohibition days, a few more samples of "moonshine" or unaged, uncolored liquor, considerable diluted and colored alcohol, and straight diluted alcohol. The alcohol in most of this material, as well as the alcohol submitted as such, was either pure U S P alcohol or alcohol recovered from completely or specially denatured alcohol. The recovered material may, and often does, carry traces of odors derived from the raw ma-

terial from which it was made, and in some instances this recovered alcohol may carry a small amount of methanol.

Methanol suddenly appeared in illegal liquor in June, 1926, about five per cent of the distilled liquor submitted during the next few months containing methanol in quantities varying from 1.6% to 8.02% with an average of 3.91%. One isolated sample responsible for a death contained 23% of methanol. We were unable to obtain any data as to injurious effects of the spasmodic or continuous consumption of the material containing the low percentages of methanol. During 1926, we received 8,667 samples of which only 15 contained any methanol, four of which were classified as distilled spirits, and 11 as alcohol. The amount of such liquor decreased during 1927 when there were submitted 8,815 samples of which 8 contained methanol in quantities varying from 1.1% up to 2.2% in samples containing from 24 to 30% alcohol, and in quantities varying from 2.8% up to 6% in samples containing more than 80% alcohol. This does not include samples of completely denatured alcohol, the character of which was evident from the sense of smell.

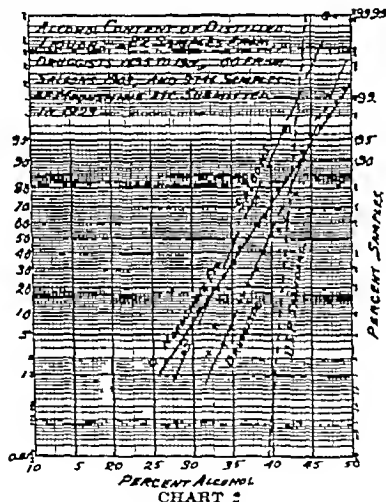
Many samples said to have caused death were given careful examination to ascertain the presence of any toxic substance other than alcohol. In all but one of these cases no such toxic substances were found. In two of these instances pharmacological examinations were made disclosing the presence of nothing more toxic than ethyl alcohol. One sample causing death was

*For record and address of author see "This Week's Issue," page 255.

the one found to contain 23% of methanol This sample was not subject to pharmacological examination, but the responsibility for the death must be placed upon the methanol

The chemical examination of distilled spirits now on the market indicates extensive adulteration in the cause of temperance This form of adulteration was fairly common in pre-prohibition days, but is becoming more common at present Distilled liquor was popularly supposed to be 100 proof, that is, to contain 50% alcohol, although the preference was for the blended whiskey of 90 proof, or 43% alcohol It formerly was, and now is popularly stated by persons not familiar with the toxicology of alcohol, that if one could only get hold of pure whiskey, the trouble caused by its ingestion would be entirely eliminated.

Between 1895 and 1901, the Massachusetts Department of Public Health obtained from drug stores eighty-two samples of whiskey all of



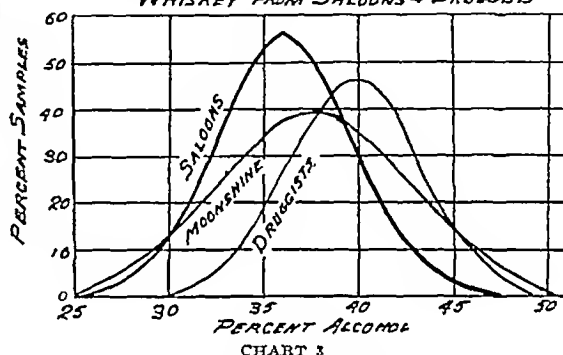
which were supposed to conform to the requirements of the United States Pharmacopoeia, but 29.3% contained less, and 85% contained more alcohol than was so prescribed

In 1904 the Police Commissioner of Boston submitted sixty samples of whiskey, four samples from each of the fifteen police stations, representing one sample from a high-grade saloon, one from a low-grade saloon, and two from saloons of intervening grades The analyses disclosed the fact that the worst ingredient from the health standpoint was ethyl alcohol, and that the most extensive adulterant was water Of these samples, sixty-seven per cent contained added water, forty per cent to an extent of 95% or more, twenty per cent to an extent of 25% or more, and seven per cent to an extent of 30% or more Chart 2 on probability arithmetic scales, and Chart 3 on arithmetic scales show the results of the examination of these samples together, in Chart 2, with the U S P standard

The character of distilled spirits has changed considerably in the past seven years Chart 4 shows the result of the analysis of 2,264 samples collected in 1921, and 4,116 samples collected in 1927, the alcohol content of which varied between 25 and 50% The average alcohol of both series was very nearly the same, namely, 36.34% in the case of the samples collected in 1921 and 36.32% in the case of samples collected in 1927 but the 1927 samples show a relatively higher percentage of samples between 24 and 35% alcohol and a relatively lower percentage of samples between 35 and 50% as compared with the 1921 samples

It is a well-known fact that when distilled spirits are permitted to age in charred oak barrels, there is an increase in secondary bodies

ALCOHOL CONTENT OF MOONSHINE AND OF WHISKEY FROM SALOONS & DRUGGISTS



which are slightly more toxic than is alcohol The work of Crampton and Tolman* showed that during an ageing period of eight years the fusel oil increased 40 to 70%, the aldehydes increased 200 to 300%, the furfural increased 150 to 250%, the acids increased 700 to 1,800%, and the esters increased 250 to 450% The increase in fusel oil is due solely to evaporation, the extract is obtained from the barrel, and the increase in other ingredients is due to chemical compounds produced from the alcohols by the ageing process The greatest increase in secondary bodies occurs during the first year In an aged whiskey there is about 99.4% of alcohol and water, the other 0.6% consists of 0.26% of solids extracted from the barrel, and 0.34% of fusel oil, aldehydes, acids, esters and furfural

The question of the relative toxicity of alcoholic beverages was studied by Whitney† who found by experiments upon rotifera, that based upon the same alcoholic content, the toxicity of intoxicating liquors decreased in the following order: cider, wine, beer, aged whiskey, blended whiskey, alcohol, that is to say, a 6% alcohol solution made from pure alcohol was less toxic than a 6% alcohol solution made from a bottled in bond whiskey

The samples submitted to Dr. Hunt for phar-

macological examination, and reported upon in the following article, were representative of the material received from police departments during the months of July, August, and September, 1927. Those submitted during July were of higher alcoholic content than those submitted

100 proof and to contain 50% alcohol by volume. When this investigation was first considered, it was the intention of the Department to have no pharmacological tests made upon samples containing any methanol, but it was subsequently deemed advisable to do so. Apart from the pos

ALCOHOL CONTENT OF ILLICIT DISTILLED LIQUOR

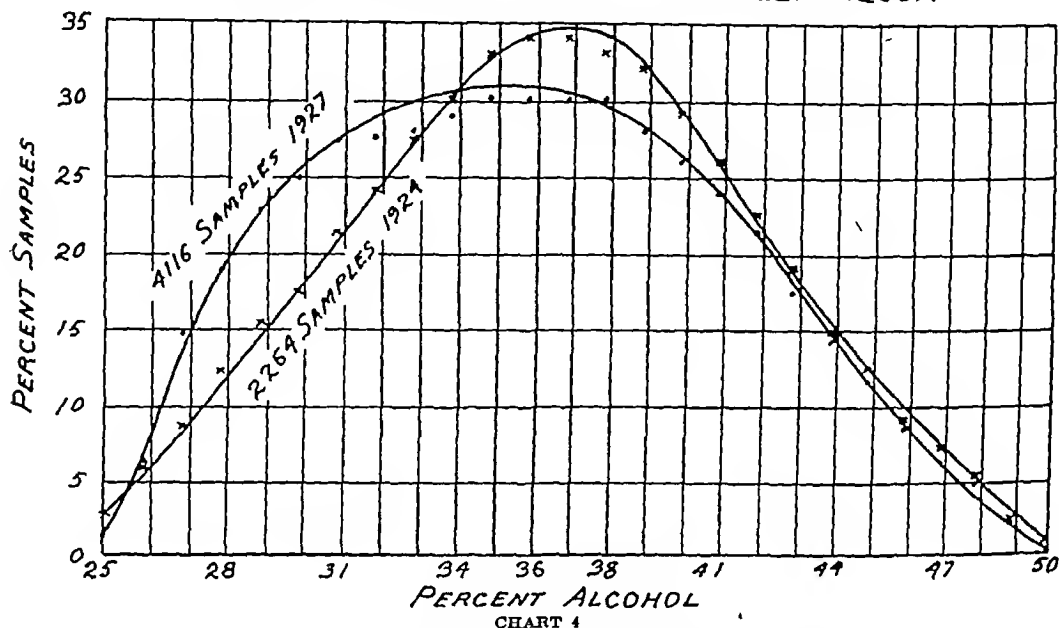


CHART 4

later, which change was due to a report received in August that successful pharmacological tests could be made on lower concentrations. The bottled in bond sample had been in my office for twenty years. When opened in August, 1927 for the purpose of analysis, it was found to be

sible presence of methanol, the laboratory examinations showed that the samples contained nothing more toxic than alcohol and water with the usual cogeneric byproducts of the process of manufacture and were on the average less dangerous than preprohibition liquor.

AN EXAMINATION OF THE TOXICITY OF ONE HUNDRED SAMPLES OF ILLICIT LIQUOR*

BY REID HUNT, M D

THE SAMPLES SUBMITTED BY MR. LYTGOE CONTAINED THE FOLLOWING AMOUNTS OF ALCOHOL (GM PER 100 CC)

Number of Samples	Gm per 100 cc
7	24.2 to 25
29	25 to 30
22	30 to 35
24	35 to 40
18	40 to 41

EXPERIMENTS were planned to test the acute, semi-acute, and chronic effects of the samples upon several species of animals. The results were compared with the effects of dilutions of pure ethyl alcohol of the same strength and with a sample of bottled-in-bond whisky meeting the requirements of the United States Pharmacopeia and with a popular "blended whisky."

The preliminary experiments were performed upon mice. For this purpose the samples were

*For record and address of author see "This Week's Issue" page 255

diluted with normal saline solution so that each cc contained 0.2 gm of alcohol, the injections were made intravenously at definite and uniform rates. A dilution of pure ethyl alcohol of this strength injected at the rate of 0.01 cc per second invariably caused immediate death when 0.015 cc per gm mouse was injected, 0.014 cc per gm very rarely and 0.013 cc never caused death. On the other hand if the injections were made at the rate of 0.002 cc per second, doses of 0.027 and usually of 0.03 cc per gm mouse were tolerated. These relations between the fatal and the tolerated doses and the rates of injection proved to be a useful means of distinguishing a solution of ethyl alcohol from solutions containing substances either more or less acutely toxic than the alcohol. Thus a solution of methyl alcohol of this strength (1 cc containing 0.2 gm) was tolerated in a dose of 0.04 cc per gm even when injected rapidly

If only 2 per cent of the ethyl alcohol were replaced by methyl alcohol, the acute toxicity was very plainly and constantly diminished the rapid injection of doses of 0.017 cc per gm of such mixtures were never fatal those 0.0175 sometimes and those of 0.018 always fatal. The liquor samples were tested by number and without my knowing the result of the analyses when methyl alcohol was present to the extent of from 1 to 2.4 per cent, I detected it by this method. The blended whisky when tested in this way had exactly the toxicity of a dilution of alcohol of the same strength whereas the "genuine", bottled-in-bond whisky was slightly more toxic than the blended whisky or a dilution of alcohol of the same strength.

All of the samples were administered to albino rats by the stomach tube in doses containing the maximum tolerated quantity of ethyl alcohol, the presence of any substance more toxic than the alcohol was readily detected in this manner. The rat is an especially suitable animal for such tests for it has a relatively high resistance to ethyl alcohol and a rather low degree of resistance to some other poisons. The alcohol was administered to the rats in the form of a solution 1 cc of which contained 0.4 gm of alcohol or in doses containing the equivalent of this. It was found that rats would invariably tolerate three doses of 21 cc per kilo of this dilution given on successive days. These results were in sharp contrast with those obtained with methyl alcohol. The immediate toxicity of methyl alcohol is, as is well known, less than that of ethyl alcohol, thus rats usually died from single doses of 26 cc of the ethyl alcohol solution but survived single doses of 29 cc per kilo body weight of a solution of methyl alcohol of the same concentration, they died however from two doses of 21 cc per kilo of methyl alcohol given at intervals of 48 hours, from two doses of 17 cc per kilo given at an interval of 24 hours and from 3 doses of 10 to 13 cc and from 6 to 8 doses of 6 to 8 cc given at such intervals. It was also found that solutions in which a part of the ethyl alcohol was replaced by an equal amount of methyl alcohol were tolerated in larger single doses than was ethyl alcohol alone, thus whereas rats died from 26 cc of the solution of pure ethyl alcohol they survived doses of 31 cc of a solution in which 10 per cent of the ethyl alcohol was replaced by an equal amount of methyl alcohol and survived 34 cc when 20 per cent of the ethyl alcohol was replaced by methyl alcohol. If a small part of the ethyl alcohol was replaced by methyl alcohol the preparation was less toxic in both acute and chronic experiments than were the preparations containing only ethyl alcohol the presence of the methyl alcohol lowered the acute effects (by diminishing the amount of ethyl alcohol) but such amounts of methyl alcohol were not sufficient to have a cumulative toxic action. Some

of the samples of liquor were of this character in proportion to the total alcohol content they were the least toxic of all the samples tested and less toxic than the samples containing all the alcohol as ethyl alcohol. They were less toxic than the samples of whisky.

The samples were also tested upon cats and the effects upon the blood pressure and heart rate determined. For this purpose the alcohol was injected intravenously at a definite rapid rate, equal amounts of alcohol of the same concentration were injected in all cases as controls. The resulting curves of the effects upon the heart rate and blood pressure were identical with all of the samples and corresponded exactly with the effects of an equal amount of pure ethyl alcohol in the same dilution.

Each sample was diluted with water so that 100 cc contained 5 gm of alcohol and these solutions served as the only source of water for groups of mice for periods of from three to five weeks. There were a few deaths among the mice in these experiments but no more than among mice which received the same diet and pure water. In no case did more than one mouse of a given group die and in all cases the survivors continued to grow and gain weight.

The results obtained by these various tests were uniform they may be summarized in the following table in which the maximum dose of ethyl alcohol tolerated is represented by the arbitrary figure of 100.

8 samples were tolerated in doses of	150 160
4	140-149
28	130 139
8	120 129
19	110-119
18	101 109
11	100
4	95-99

Thus of these 100 samples 85 were less toxic than an aqueous solution containing the amount of alcohol (40 gm in 100 cc) contained in the sample of "genuine" whisky submitted, 11 samples had the same toxicity as this preparation and four were slightly more toxic. (Of these four samples one was the genuine whisky itself and two of the other three samples contained 40.85 gm alcohol in 100 cc and another 40.69 gm alcohol in 100 cc as compared with 40.02 gm in the whisky. Thus the slightly greater toxicity of three of the samples were satisfactorily explained by the slightly greater amount of ethyl alcohol.)

It should be emphasized at once that the above figures are based upon the results of the administration of the samples irrespective of the alcohol content, that is, the maximum amounts (the number of cc per kilo animal) tolerated were determined. There is a certain justification in presenting the figures in this way the consumer of alcoholic beverages seldom has any accurate knowledge of their alcohol content he speaks of how many glasses or perhaps ounces he has con-

sumed On the other hand probably many continue to drink until they obtain a definite effect of the alcohol and in so doing would consume a larger amount of a preparation of low alcoholic content than of one with a higher percentage And it may well be, and indeed seems to be the case, that some of the preparations of comparatively low alcohol content may contain injurious ingredients other than the ethyl alcohol

Accordingly all of the samples were tested in doses containing equal amounts of ethyl alcohol The toxicity of 90 of the samples corresponded exactly to the ethyl alcohol content, there were no indications of the presence of toxic substances other than the ethyl alcohol The toxicity of seven samples was slightly greater than could be accounted for by the ethyl alcohol content, in five of these the toxicity was at most not more than 5 per cent greater than that of solutions of alcohol of corresponding strength, one of these samples was the "genuine" whisky In two cases the toxicity was approximately 10 per cent greater than that of dilutions of ethyl alcohol of corresponding strength The alcohol content of these two samples was very low (24.2 and 24.9 per cent respectively) so that nearly twice as much of the samples as of dilutions of alcohol of the average strength of whisky were necessary to produce comparable effects, given in the same doses as whisky they were much less poisonous than the latter It is interesting to note that with one exception all of the samples which were more toxic than dilutions of ethyl alcohol of corresponding strength had a low alcohol content

On the other hand three samples were slightly less toxic than corresponding dilutions of ethyl alcohol, these contained 0.93, 2.14 and 2.33 per cent of methyl alcohol Attention was called above to the fact that small amounts of methyl alcohol substituted for ethyl alcohol measurably lowered the acute toxicity of the mixture (the acute toxicity of methyl alcohol being less than that of ethyl alcohol) but did not increase the chronic toxicity, the body seems to be able to tolerate small amounts of methyl alcohol indefinitely just as it can tolerate small amounts of some other poisons indefinitely

One of the samples showing a toxicity slightly greater than could be accounted for by the ethyl alcohol also contained methyl alcohol (to the extent of 2.4 per cent), but this greater toxicity can not be attributed to the methyl alcohol for it was the acute toxicity which was slightly higher than that of a corresponding dilution of ethyl alcohol and the acute toxicity is lowered by methyl alcohol

DISCUSSION AND NOTES

The only poisonous substance of significance found in these samples was ethyl alcohol and the toxicity of the various samples was closely parallel to the ethyl alcohol content Although much

has been said and written recently on the alleged great toxicity of much of the illicit liquor now being sold, I know of no analyses or experiments indicating the presence of substances distinctly more toxic than ethyl alcohol and present in sufficient amounts to have a distinct effect A number of instances have been reported in the past in which mixtures containing a high percentage of methyl alcohol were sold as whisky (with very disastrous results) but very few such cases seem to have been reported recently Deaths are of course constantly occurring from the consumption of illicit liquor but very rarely has any evidence been offered that they were not due entirely to the ethyl alcohol A fact frequently overlooked is that a person deeply intoxicated is near death and that a dose of alcohol slightly greater than that necessary to cause profound intoxication is a fatal dose This condition may be realized when a liquor of unusually high alcohol content is consumed in the same quantities as if it contained the more usual percentage of alcohol Three instances apparently of this character have been brought to my attention death was attributed to "poison whisky" but the "whisky" in question contained, in two cases, over sixty per cent of ethyl alcohol and in the third case eighty per cent, of ethyl alcohol and no other poison was found.

Much emphasis had been placed upon the presence in illicit liquor of methyl alcohol but here again definite information both as to the amount of this alcohol in such liquor and as to the injurious effects of it is lacking, there does not seem to have been any marked increase in the number of cases of toxic amblyopia—the most frequent sequel of the consumption of methyl alcohol—with the increased sale of illicit liquor

There is neither experimental nor clinical evidence that amounts of methyl alcohol such as those found in the samples which we examined have a deleterious action, the poisoning caused by such samples is due to the ethyl alcohol In fact the toxicity of these mixtures was measurably less than that of pure ethyl alcohol of the same strength This result is not surprising when it is remembered that these two alcohols differ markedly in their pharmacological action ethyl alcohol has a more pronounced, whereas methyl alcohol has a weaker action upon the higher nerve centers The effect of the one is not simply added to that of the other, on the contrary, each dilutes the other so that animals tolerate larger doses of some mixtures of the alcohols than of either alone

Thus, a solution in which ten per cent of the ethyl alcohol had been replaced by methyl alcohol was tolerated by animals in larger doses than a solution containing only ethyl alcohol, such a mixture when given daily for several days was also better tolerated than the pure ethyl alcohol There were no indications that

the methyl alcohol was having any effect other than that of diluting the ethyl alcohol. This was still more marked as regards acute effects when twenty per cent of the ethyl alcohol was replaced by methyl alcohol, the lethal dose of such a mixture being about thirty per cent larger than that of ethyl alcohol alone. When the largest tolerated doses of such mixtures were repeated daily for a week or ten days, symptoms suggesting a cumulative action of the methyl alcohol appeared. When a mixture consisting of 70 per cent ethyl and 30 per cent methyl alcohol was given to rats daily in doses as large as the tolerated doses of ethyl alcohol the distinct cumulative action of the methyl alcohol was evident and death with symptoms characteristic of methyl alcohol poisoning occurred after six to eight doses. I am confident that anyone who has seen the effects upon animals of equal doses of whisky on the one hand and on the other hand a mixture of ethyl and methyl alcohol of the same alcoholic strength, but in which 10 or 20 per cent of the alcohol was present as methyl alcohol, would feel that there would be less (at least immediate) danger in taking the methyl alcohol mixture than the whisky. Of course great care must be taken in transferring the results of experiments on animals to man, but it may be recalled that pharmacologists, as a result of experiments on animals recognized the peculiarly dangerous properties of methyl alcohol long before clinicians did.

Percentages of methyl alcohol comparable to those in the samples of illicit liquor investigated in this study have frequently been found in certain varieties of European brandies, but no injurious effects seem to have been attributed to them.

The often-expressed fear of injury to the eye from such small percentages of methyl alcohol is probably not well founded apparently the smallest amount of methyl alcohol to which injurious effects upon the eye have been attributed was about 15 cc and this was in a case of a claimant for damages and ophthalmologists familiar with the case expressed much doubt as to whether only this amount had been taken, to get even this amount of methyl alcohol in the samples tested in this study would involve the taking of a surely fatal dose of ethyl alcohol.

Of course no one would condone the addition of even small percentages of methyl alcohol to potable liquors. Methyl alcohol does not produce to a distinct extent, if at all, the condition of euphoria for which ethyl alcohol is ordinarily taken, nor does it have a food value as does the latter. It is unwise to permit even small amounts of a useless and potentially dangerous substance like methyl alcohol in any preparation which is taken internally, authorities would do well to prosecute the vendors of illegal beverages containing methyl alcohol under the general laws relating to poisons and perhaps also for the mis-

use of denatured alcohol as well as under the provisions of the prohibition act. On the other hand it serves no useful purpose to exaggerate the dangers of small amounts of methyl alcohol in liquors and so divert attention from the more serious dangers of large amounts of ethyl alcohol.

Another point of some interest in this study was the finding that a sample of genuine bottled-in-bond whisky, of the most approved "medicinal quality", was slightly more toxic than any of the samples of illicit liquor, with the exception of three samples, the slightly higher toxicity of which was plainly due to the slightly higher content of ethyl alcohol. Even when the genuine whisky was compared with the other samples on the basis of their alcohol content it was found to be slightly more toxic than ninety-three per cent of them. Only two of the samples were, in proportion to their alcohol content, more toxic than the whisky and in neither case was the difference marked. These two samples had a low alcohol content (24.2 and 24.9 grams per 100 cc), possibly they were liquors distilled from "home-brew" and analogous to specimens studied by MacNider (*J of Pharmacology and Exper Therapeutics*, Vol XXVI, No 2, p 97, 1925) and found by him to have certain toxic actions different from dilutions of ethyl alcohol of corresponding strength.

In view of these results the question may again be raised as to the basis for the belief held by some American physicians and many others as to the "wholesomeness" and peculiar therapeutic virtues of "whisky" made in a certain manner and colored by something extracted from charred wood. Although special therapeutic virtues seem to be ascribed to these by-products, no one seems to have suggested that they be isolated and administered independently of the alcohol. That it is desirable to administer drugs in a form agreeable to the patient, is recognized, but no such emphasis has been placed upon this factor in the case of drugs of vastly more therapeutic importance than alcohol. In any case, it is not necessary to resort to such an elaborate and time-consuming process as the method of making U S P whisky no less an authority than Dr Wiley stated "You can so imitate a whisky that even the elect would be deceived" (Proceedings Before and By Direction of the President Concerning the Meaning of the Term "Whisky" Washington, 1909, p 859. Asked to name some of the "elect", Dr Wiley named himself and President Roosevelt.)

There is no reason to suppose that European physicians, using alcohol in forms other than whisky, do not secure as good therapeutic results, as do American physicians, it may be that the adherence of the latter to the belief in peculiar virtues of the U S P whisky is partly responsible for the exorbitant and unreasonable

prices which the American sick are compelled to pay for "medicinal whisky"

A number of the samples of illicit liquor investigated in this study had an odor and flavor which would probably have been as acceptable, or more acceptable to many, than genuine medicinal whisky and which were also slightly (but not significantly) less poisonous than this, although containing the same amount of alcohol.

The conclusions recently drawn by Chopra (*Ind Jour of Med Res* 1927, 14, 1005) from an exhaustive study of the "toxicity of mature and immature genuine spirits and imitation or factitious spirits" are of interest in this connection.

This author found "ethyl alcohol by itself to be as toxic as ethyl alcohol plus the essences used in the imitation or factitious spirits, the specimens of fully matured and immature genuine spirits and imitation or factitious spirits showed about equal toxicity, ethyl alcohol if mainly responsible for the toxic effects, the deleterious effects of the cheaper spirits are due to the tendency on the part of the consumer to ingest larger quantities, partly because of their comparatively milder taste, which is less satisfying to the palate"

The only new problem, from the public health standpoint, suggested by this study, is in connection with the variable and usually unknown percentage of ethyl alcohol in illicit liquors. It is evident that a person accustomed to drinking large amounts of a beverage containing 25 per cent of alcohol, would seriously endanger his life if he drank equally large amounts of a liquor containing 40 per cent of alcohol, the great importance of this factor at the present time is strikingly shown by Lythgoe in the preceding article. The problem seems to be still primarily a question of ethyl alcohol, rather than one of "good" or "bad" alcohol. In other words, it is not the so-called "bad boot-leg liquor" but the reputed "good grain alcohol" which causes acute poisoning and death, this is the case with both the illicit and the "medicinal" whisky.

Closely connected with this subject, however, is another problem which deserves careful con-

sideration—the use in the industries, and especially in food products, of substitutes for ethyl alcohol which are not subject to the often annoying restrictions placed by legislation upon this use of alcohol. Revenue laws enacted twenty-five or thirty years ago in regard to the use of ethyl alcohol, led to the widespread use of methyl alcohol in many food and analogous products and with very disastrous results. An analogous danger seems to be present now substances distinctly more dangerous than methyl alcohol have been proposed as substitutes for ethyl alcohol in food products. It is not sufficiently recognized what a unique position ethyl alcohol occupies in respect to the animal body; it is practically the only known substance essentially foreign to the animal body which, when present in the blood, is, in moderate amounts, easily and quickly rendered harmless. The body can not only destroy ethyl alcohol, but can do so in a manner to make it of use; entire nations derive as large a part of their food from alcohol as from meat and other sources of proteins. Yet substitutes for alcohol in preparations to be taken internally have been proposed with far less investigation than would be given to a new motor fuel.

CONCLUSIONS

The toxicity of one hundred samples of illicit liquor was tested by various methods upon different animals. The samples varied greatly in color, taste, odor and alcohol content, six contained small amounts of methyl alcohol. The samples were probably representative of the illicit liquor sold in Massachusetts.

The toxicity of the samples was closely parallel to their content of ethyl alcohol, in no case were there indications of the presence of substances significantly more poisonous than ethyl alcohol.

Six of the samples contained methyl alcohol but the amounts were not sufficient to increase either the acute or chronic toxicity.

Note: Since the completion of this report Atkinson has published (*Jour Am Pharm Assoc* 1928 17, p 28) an excellent review of "the poison in illicit liquor."

THE IDEAL SYPHILIS CLINIC*†

BY AUSTIN W. CHEEVER, M.D.

WHILE it is rarely, if ever, possible to attain the ideal syphilis clinic, it seems not out of place to discuss somewhat informally the nearest approach to it that can practically be made.

In order to profit by ready access to a laboratory where proper serologic, urine, and other examinations can be made, to take advantage of

X-ray facilities, and to have the privilege of consulting freely with specialists in any desired field, the ideal syphilis clinic must be a part of a general clinic. Then, too, this arrangement will make possible complete physical examinations at the outset of treatment and at occasional intervals thereafter unless these can be made by the syphilis clinic personnel.

There is another none the less important, though entirely different reason why the syphilis

*Read before the Fifth New England Health Institute at Providence R. I. September 29 1927.

†For record and address of author see This Week's Issue page 255.

clinic can best serve in connection with a general clinic, and that is that the presence of patients coming for other ailments makes the syphilitic feel less conspicuous for those who have venereal syphilis are naturally very sensitive and those whose infection is accidental and in no way due to their own misconduct are very loath to be classed with the other group.

That it may do its full duty to the community, the clinic must have daytime and evening hours as there is always a certain percentage of people who cannot afford to lose time during the day and some who, though they can afford it will not be able to retain their positions if they take it as frequently as is required for proper treatment.

Fees should always be charged, they can be adjusted to the needs of the community but no patient who really cannot pay should be turned away under any circumstances. It is probably wiser to have rates higher in the evening than in the daytime, it may be possible thereby to pay a very small salary to the evening staff.

It is very necessary to have at least a few beds which may be used for infectious patients especially those with mouth lesions so that they may be retained for a few days until the danger of spreading the disease is past (and in most cases this is but a very short time), for patients for observation and study whatever the type and stage of the disease, and for patients for lumbar puncture so that they may be allowed at least a few hours in which to lie perfectly quietly.

I believe it is of importance for a syphilis clinic to be combined with the skin department if not under one chief at least in close association with it. Both of these departments must work together harmoniously without jealousy and with a rotation of service for all except the chiefs, otherwise it is absolutely impossible to train the younger men to have sufficient diagnostic acuity. This is important in a specialty which depends so largely on memory of what one can learn through fingers and eyes. It is impossible to retain impressions sufficiently clearly over any great length of time, unless one is constantly reinforcing them.

From the patient's point of view it is ideal to have the same staff on duty throughout the year, for a syphilis patient appreciates more than any other probably the opportunity of seeing the same physician regularly. When he finds the same doctor in attendance on successive visits, he develops much more confidence in the clinic and the care which he is given, and he will throw less load on the social service department because of less need of follow-up. But it is important that the staff also be protected from too continuous service in order to avoid the danger of getting "stale" from too steady routine. Free periods should be given for complete relax-

ation teaching or research work. If the services are planned to be fairly short, the periods of service of the different men should overlap so that the patients never feel that there are many strange faces among the staff.

Neurosyphilis should be treated in the same department as syphilis of other types when possible, which of course, means that there must be some one in the department with sufficient neurologic training. With a neurologist's assistance there should be enough rotation of these cases so that several or all of the staff would eventually become proficient to adequately handle this group. If the organization of the hospital is such that the neurologic cases must go to their particular department for treatment, (an arrangement which doubles the necessary technical staff and equipment for giving the intravenous injections) then there must be adequate rotation of service between the departments of syphilis and neurology so that the neurologist can become relatively conversant with syphilis in all its stages and phases.

Our ideal clinic will have a readily available social service with workers showing such kindly and sincere helpfulness that patients who quickly sense and resent an overbearing inquisitive attitude will feel their friendliness and will quickly respond. A really efficient follow-up system should be maintained by this department to look after lapsed cases properly, to round-up complete families to arrange for transportation of invalids, and such duties.

Records should be kept as full as possible considering the number of staff and the time that may be devoted to that purpose but they must be in such form that they may be rapidly understood by any physician in the clinic, and sufficiently complete to be of value if they are called for by the courts. They should be dependable for statistical purposes at least in preparing data for publication.

Teaching is not always possible but it is of great advantage to a clinic to be associated with a teaching institution for the presentation of cases increases one's acuity of observation and thought and the quality of the work is likely to be better. The presence of students can be so arranged as not to antagonize patients.

Again the clinic must work in constant cooperation with practicing physicians in the neighborhood being ready at all times to offer any sort of assistance and instruction and to make possible opportunities for observation and practice to men outside the clinic who are sufficiently interested to take advantage of them.

In a paper of this type treatment need be considered only from a very general point of view. A properly flexible routine is advisable for early cases which simplifies matters for the staff and appeals to patients of certain mental grades who may not understand that the disease cannot be treated with mathematical precision, but this routine must be changed upon proper indications to carefully individualized treatment. In

other words, it is often safe to fit the patient to the treatment, but always safe to fit the treatment to the patient. Of course all late cases must be entirely individualized.

As I have intimated before, all patients at a time as nearly as possible to the first visit should have, either in the skin clinic or in the general medical, a complete physical examination, including urinalysis, serologic tests, blood count, hemoglobin estimation. Defects found at this examination should be corrected as rapidly as possible, especially foci, poor teeth, associated urethritis, prostatitis, anemia, obesity, underweight, and such conditions.

All patients with late syphilis, and some ap-

propriate ones with early stages, should have a lumbar puncture at the time of admission. During treatment, reasonably frequent checks should be made, the urine examined and other necessary laboratory procedures carried out. A full physical examination should be done every year, including serologic tests and in some cases lumbar punctures. After patients have fulfilled the complete course of active treatment, they should be seen once or twice a year for at least fifteen years for the double purpose of knowing the end results in as many patients as possible, and of keeping in touch with the patients to pass on to them any new knowledge or methods which may be gained.

A CASE OF SYRINGOMYELIA AND NEUROSYPHILIS*

BY MORRIS YORSHIS, M. D.

SYRINGOMYELIA and neurosyphilis form a rare combination, interesting because of the complexity of the clinical picture. The following case is reported because the post-mortem study revealed this unusual combination.

HISTORY—J. D. aged 70, entered the Boston City Hospital complaining of numbness and weakness in both legs.

F. H.—One sister died of general paresis. Otherwise, the family history is negative.

P. H.—Gonorrhoea 20 years ago at the age of 50. During the same year the patient noticed that his left hand became weak. Two years later, he fell from a load of hay striking his head and causing a deformity at the back of his neck which persisted for the rest of his life and which made motions of the neck difficult. Seventeen years ago, the patient contracted lues, for which he received treatment for twelve months. His left leg at this time became numb and weak, causing him to drag it. Two years ago, he had 'rheumatism' of the left leg. Last year he noticed his right hand was growing weak and numb. He suffered no pain.

The following findings were recorded on examination. **Gait and Station**—The patient dragged his legs, not being able to walk without support. He had difficulty in maintaining his position when the eyes were closed. **Cranial Nerves**—The pupils were unequal, slightly irregular, the left smaller than the right. Both were fixed to light and reacted sluggishly to distance. The patient was slightly deaf due to eighth nerve involvement. All the other cranial nerves were intact.

ARMS—There was evidence of atrophy in both hands, especially the left, most marked in the thenar eminences. The left hand was in a drooped position, the right hand in a clawlike attitude. There was wasting of the infra and supra spinati, deltoids, biceps and triceps muscles. No grips were obtainable owing to the markedly weakened hands. The handwriting was impossible to decipher. The biceps, triceps and wrist reflexes were present but sluggish.

The abdominal reflexes were absent except in the upper right quadrant.

LEGS—There was definite paresis and spasticity. The sensory tests were not satisfactory due to the patient's deafness and consequent lack of coöperation. The cremasterics were present. The knee jerks were very brisk on both sides and patellar jerks were obtainable. The ankle jerks were hyper-

active on both sides. A Babinski was present on the right; there was no ankle clonus. Mentally he was disoriented, stating for example, that the year was 1895 (1925). The test phrases were fairly well performed. Because of deafness, the mental examination was difficult.

A general visceral examination was negative except the heart. The apex impulse was outside the nipple line, 13 cm. to the left of MSL. RBC was under the sternal margin. There was no enlargement of the great vessels. The sounds were of good quality with many extrasystoles. There was an occasional dropped beat. The first sound at the apex was split and a slight systolic murmur was heard. At the base there was a slight systolic murmur which was best heard in the aortic area A2/P2. The second sound was loud and ringing. The radials were difficult to feel. The temporals were not sclerosed. The blood pressure was 180/90.

SPINE—There was lordosis in the dorsal region with some degree of kyphosis about the seventh cervical vertebra and definite lateral scoliosis to the right. There was no bend in the dorsolumbar spine. The erector spinae muscles were atrophied.

LABORATORY FINDINGS—The urine showed the slightest possible trace of albumin. Blood Hgb 94%, RBC 5,120,000, WBC 17,000. Differential PMN 84%, Mono 8%, Lymph 6%, Eosinophiles 2%. The blood Wassermann was positive. The spinal fluid was clear. The pressure and sugar content were normal. The globulin was increased. The Wassermann reaction of the spinal fluid was positive. There were 45 lymphocytes and the Gold Sol was 55555441. The X-ray of the chest showed marked widening and tortuosity of the aorta with areas of calcification in its wall. Extensive hypertrophic arthritis of the lower four cervical vertebrae was demonstrated by X-ray of the spine.

PROGRESS NOTES—Two weeks after admission to the hospital the patient's right leg also became numb and weak. The following month, while standing near a radiator he burnt both his elbows and wrists without realizing it until the following day. A physical examination at this time showed fixed pupils, diminished touch and corneal reflexes, a loss of pain and diminished heat sense in the right shoulder girdle. There was atrophy of the muscles supplied by the sixth, seventh and eighth cervical segments—more marked on the right. The legs showed spastic contractures, decubitus and an arthritis of the right knee. A double Babinski was present and a cervical arthropathy. The patient later developed what seemed a bulbar palsy, experiencing difficulty in mastication and deglutition and

*For record and address of author see 'This Week's Issue' page 256.

there was drooling. The voice was very feeble. The patient died six months after admission.

POST MORTEM FINDINGS—The heart was negative save for irregular patches of atheromatous thickening in the aortic cusps. The aortic cusp of

measuring 11.5 cm in circumference in the ascending portion.

The brain (Fig 2) weighed 1170 gms. The pia arachnoid was thickened and the gyri over the pre-central and post-central areas were definitely flat.

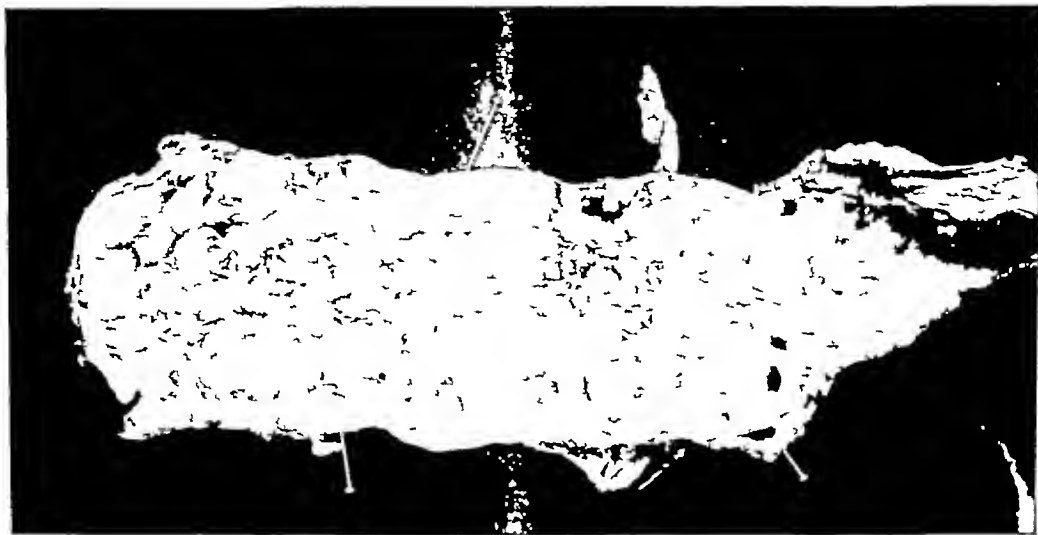


FIG 1 Aorta—Showing diffuse calcification.

the mitral valve and the endocardium of the left auricle. The aorta showed a very extreme degree of arteriosclerosis (Fig 1) with numerous depressed or raised yellow to pearly gray ulcerated plaques throughout and much calcification. The aorta was somewhat dilated above the sinus of Valsalva, meas-

ured and atrophic. There was moderate arterio-

sclerosis of the basilar artery and vessels of Willis. The microscopic study of the cortex showed typical advanced general paresis. The details of the study are as follows.

The cortex showed the pia somewhat thickened

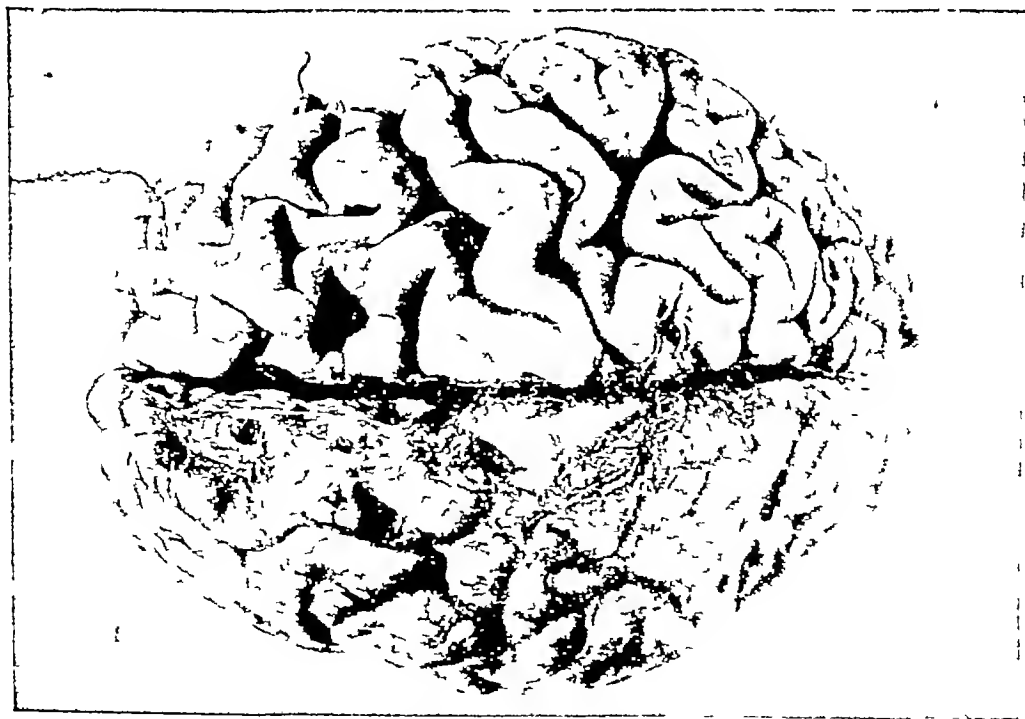


FIG 2 Brain—One hemisphere stripped of meninges—showing atrophy. One hemisphere with pia showing chronic inflammation.

and containing blood vessels with thick walls, the intima, media and adventitia being involved. In places there was infiltration with lymphocytes and endothelial cells. Within the cortex there were prominent small blood vessels, showing moderate congestion and about some of them there was very marked perivascular infiltration in which plasma cells played a prominent part. The arrangement of nerve cells was in places very good, but in other places the laminations were destroyed and the nerve cells were degenerated. Another section of the cortex showed more meningitis and more nerve cell destruction but less perivascular infiltration. Plasma cells

there was also diffuse degeneration around the whole cavity—not localized in any particular tracts. The sections from the dorsal cord were very much shrunken and flattened. The central canal was very wide, and had about it marked gliosis. The gliosis was also conspicuous throughout the whole dorsal half. In the meninges there was a considerable infiltration of lymphocytes. In the ventral median fissure there were two large dilated veins and one large artery with a conspicuously thickened wall. No motor nerve cells were found on examination of five sections. Levaditi stains of two levels of the spinal cord were examined and showed no spirochaetes.

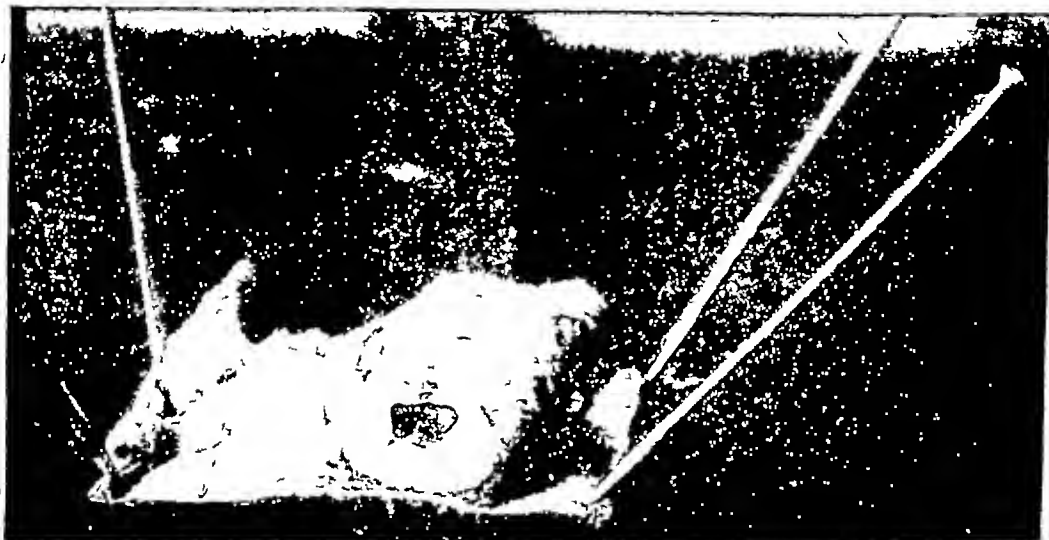


FIG 3 Spinal Cord—Showing Syringomyelia

were not abundant lymphocytes being the common exudative element.

In the spinal cord (Fig 3) the meninges were not remarkable. The cord was flattened and atrophic in the cervical and dorsal region and a section in the dorsal region showed cavitation on both sides leaving only a cortical shell. The consistency was quite soft and pulpy and no normal markings were seen. A section in the lower dorsal and upper lumbar region showed no cavitation but a soft pulpy surface without markings.

The microscopic study of the spinal cord presented a cavity which extended from the upper cervical region at about the level of the third cervical root and probably even higher although in the upper extremity of the cord there was an injury due to removal at autopsy. This extensive cavity then proceeded downward reaching its maximum size in the lower cervical and upper dorsal portions of the spinal cord. The whole cord appeared smaller than normal at this level. In the lowest dorsal segments the cord was very much flattened, showing gliosis but no true cavity. In the lumbar region, there was no external abnormality but on section there was found to be a distended central canal.

A section of the cord stained with cresyl-violet showed a large cavity. This was an outgrowth from the central canal. There was thickened ependyma subependymal gliosis and diffuse gliosis while the ventral horn cells were remarkably well preserved. The pia was thickened and in spots showed infiltration with lymphocytes and plasma cells and the dura was somewhat thickened and slightly infiltrated.

Weigert sections of the cord showed a large cavity in the cervical region and degeneration of the cortico-spinal and dorsal tracts especially although

DISCUSSION—The patient's family history is interesting in that his sister died of general paresis. The physical examination of the patient on admission showed two kinds of signs—those of upper and lower motor neuron degeneration, together with neurosyphilis, as proven by the spinal fluid examination. The disorientation, deafness and emotional instability, plus the typical alterations in the spinal fluid, such as pleocytosis, increased globulin and protein, parietic gold curve and positive Wassermann test, warranted a diagnosis of general paresis. But the other condition present—was it also luetic or was it another disease? A tentative diagnosis of luetic amyotrophic lateral sclerosis was made because both anterior horn and pyramidal tract were involved and no satisfactory sensory changes were found. Cases of syphilitic amyotrophies were previously reported by Dana and Leri, the latter believing it to be an entity comparable to tabes. Chronic hypertrophic pachymeningitis at the level of the cervical region could also explain the various signs, but the duration of the symptoms and signs was against this diagnosis. However, when the patient burnt himself accidentally without pain, the diagnosis of syringomyelia was made. It is extraordinary in that this chronic progressive disease developed at such a late age and went on hand in hand with general paresis, neither

disease conflicting with the other nor altering the course of the other. The dissociated anaesthesia obtained on the last examination the arthropathy, the spastic paraplegia, atrophy, contractures, and bulbar signs well conform to a text book description of syringomyelia while the

mental signs and the spinal fluid findings were typical of general paresis

Thanks are herewith given to Drs. Myerson and Cobb for permission to publish this case and further thanks to Dr. Cobb for photographic and special microscopic work.

CONTROL OF BLOOD SUPPLY IN TONSILLECTOMY*

BY M. P. SMITHWICK, M.D.

AFTER thirty years' experience in performing tonsillectomy by the usual methods the realization that bleeding or the attempt to avoid it is the chief obstacle to uniformly good results led me two years ago to adopt the following technique which has proved satisfactory. There is nothing unusual about the theory of the method. It merely consists in removing the tonsil practically as one would an organ from any other part of the body. Most operators probably consider this unnecessary and perhaps a little difficult in tonsillectomy. With a little practice however the procedure is quite simple and probably is of value in that it insures complete removal of the tonsil, reduces the chance of post-operative hemorrhage to a minimum, eliminates the fear of it, and decreases the risk of inhalation of blood and secretion into the bronchial tree. The noteworthy feature of the technique, and the only one which has not been suggested by others, is the clamping of the blood supply before cutting, followed by ligation.

A preliminary dose of atropine 1/120 grain is given to adult patients and a proportionate dose to older children operated upon under general anesthesia. Adults operated upon under a local anesthetic are given morphine 1/4 grain.

Operation. The tonsil is drawn forward by a tenaculum and a small opening made just through the plica between the capsule of the upper extremity of the tonsil and the junction of the pillars. Into this opening the blunt end of a tonsil knife is inserted and the plica alone is slit the full length of the posterior pillar. Next starting as before, with the blunt end of the knife the plica is slit the full length of the anterior pillar. The plica has now been incised all around the tonsil except where the lower edge of the plica joins the tongue. If the incision goes no deeper than the plica there is no bleeding of consequence.

With the end of closed curved scissors the posterior pillar is pushed from the tonsil capsule by keeping close to the capsule. Next the anterior pillar is pushed from the tonsil capsule. The plica at the junction of the pillars is pushed gently away from the upper end of the tonsil. If this separation of the tonsil is made poste-

riorly and anteriorly with gentleness no vessel of importance will have been torn as a rule but occasionally a sizeable vessel between pillar and capsule will need tying. The tonsil will now be suspended by its essential vessels and little tissue besides, forming a very narrow longitudinal partition from tonsil capsule to fossa. The nerves are frequently plainly seen running in this partition to the lower end of the tonsil capsule.

Now comes the feature referred to and which offers excellent practice in tying vessels in a deep position. If a preliminary opening is made with the forceps closed there is less chance of rupturing vessels. One jaw of a seven-inch curved artery forceps is gently pushed behind the anterior pillar through the thin partition of vessels referred to at or above its middle point and emerging anterior to the posterior pillar. The tonsil held in the tenaculum is put under some tension and the artery forceps locked. If this has been done properly the upper portion of the tonsil is entirely anterior to the firmly locked artery forceps. When the tissue grasped by the forceps is cut away the tonsil sags, allowing an easy tie, the forceps being removed as usual when the first knot is set. As the tissues grasped by the forceps are delicate one must be careful not to tear them away while making the tie. Those who have no objection to leaving cut vessels untied can now remove the tonsil with the snare with a better chance than usual of getting the whole of it.

Those who, like the writer, prefer to tie cut vessels now pass one jaw of the forceps through the partition of vessels keeping close to the floor of the tonsil fossa and emerging as before anterior to the posterior pillar. When the forceps is locked it should grasp all the remaining vessels of consequence. When these are cut the tonsil should be held only by the attachment of the lower edge of the triangular plica to the tongue or should be freed to that extent. A tie is made as before and the forceps removed. One can now cut this attachment of plica to tongue either with a snare or scissors.

The above operation insures a definite control of blood supply and one may hope that as in other operations the average result will improve with experience.

NURSING CANCER PATIENTS IN THEIR HOMES†

BY LUCILE EAVES AND ASSOCIATES*

A MERCIFUL conspiracy of reserve has drawn a veil over the distressing details of the difficulties which must be met when terminal cases of cancer are nursed in private homes,—particularly when these are the overcrowded quarters into which urban families have been forced. A comparison of the number of these patients with hospital resources in the United States makes it evident that the majority of such sufferers must depend on home nursing. In 1923, the general hospitals of the United States reported beds for 247,256 patients. During the following year, 91,138 persons in States of the registration area died of cancer. The Massachusetts Cancer Commission (Special Report, p. 64) concludes that cancer patients require average periods of terminal care of four to five months duration. If all victims of cancer received four months terminal care, then one bed in eight of all the general hospitals would be occupied continuously by these incurable patients, and additional beds would be required for cancer patients of States not included in the registration area and for those undergoing radium or surgical treatments.

However, the general hospitals often refuse to take chronic cases, because more can be accomplished when care is given to patients with acute maladies for which improvement or cure may be expected. The average period of hospital treatment reported for all types of cases was less than two weeks, so that eight ordinary patients can be benefited by services required for one of these incurable victims of cancer.

It is evident that but a relatively small proportion of these patients can hope to have their sufferings alleviated by the expert care given in good hospitals. Only about five per cent of the population of the United States is included in the income classes which might be expected to employ trained nurses in their homes. This large, rapidly-increasing group of sufferers must be cared for chiefly by relatives, friends or attendants, who are in great need of expert advice and guidance in order that they may perform skillfully the varied services required by persons dying of cancer. It is obvious that assistance and instruction in the home care of cancer patients will be an increasingly important part of

the services of public health nurses. Persons responsible for the training and supervision of these nurses may profit by a clear statement of the conditions surrounding and of the services demanded by this group of patients.

The following discussion is based on a representative group of 181 of the 1517 cancer patients cared for during five years (1922-1926) by nurses of the Boston Community Health Association, and on 628 histories obtained by conferences with surviving relatives of Boston cancer victims (1924-1925), or by the study of records in the hospitals where they had received treatment. We have been able also to obtain less complete information about 962 persons who died of cancer in hospitals of public or private institutions. These and other more varied sources of information make possible reliable discussions of the following topics:

- 1 Sex, age and nationality distribution of cancer patients who must be given terminal home care
- 2 Their probable financial and personal resources
- 3 The nursing services which they will require

1 Sex, age and nationality distribution

"Year after year statistics show that more than half of those who die of cancer are females, although the male population of the registration area exceeds the female" is the conclusion of the Federal Chief of Vital Statistics. In Massachusetts, where there is an excess of females in the population, there are 160 women to every 100 men who succumb to this disease. Not only is the ratio of women victims greater but a relatively higher proportion receive home care. Women stricken with a mortal disease wish to remain in their accustomed surroundings, and relatives often make heavy sacrifices to gratify this feeling. Records of the two public hospitals studied showed that nearly three out of four of the cancer patients had been men, while there were two women to every one man among the cancer patients cared for in their homes by the Boston Community Health Association (Table 1).

Numerous statistical studies have established fully the fact that cancer attacks persons who have passed the prime of life. The most common ages in the groups studied were between 60 and 65 while the average age at death of patients nursed in their homes was 60.2 years. Women who died of cancers of the female genital organs averaged five years younger (54.9).

Recent European and American studies show great variations in cancer mortality between nationalities and localities. While it is clear that these differences may be lessened when there is

*Grateful acknowledgment for assistance in this coöperative study is made to the officers and nurses of the Boston Community Health Association whose reports of their services have supplied data for this discussion. I am under special obligations to Miss Mae Chapin, Statistician of the Association for her assistance in locating records and for admirable annual summaries of the cases receiving care. Students in my Simmons College research courses and my Assistant in the Research Department of the Women's Educational and Industrial Union have contributed to the analysis of these records and preparation of statistical tables and charts. Data from records of the Community Health Association have been supplemented by information obtained in field work and by records of hospitals and institutions giving care to cancer patients.

†For record and address of author see This Week's Issue page 256

greater uniformity in medical care and diagnosis, it hardly seems probable that they will be overcome entirely in the near future. In the United States the foreign-born suffer more from cancer than the native stock. The average crude

be chiefly elderly women, and the foreign-born will be largely represented when nurses serve communities having groups of Irish, German, Scandinavian, British and Canadian immigrants (Table 1)

TABLE 1. DISTRIBUTION BY MATERNAL PARENTAGE OF A SAMPLE GROUP OF CANCER PATIENTS DISCHARGED FROM THE CARE OF THE BOSTON COMMUNITY HEALTH ASSOCIATION.¹

Birthplace of mother	Persons of specified maternal parentage.			
	Total		Men	Women
	Number	Per cent,	Number	Number
Total,-----	181	100.0	55	126
United States,-----	62	34.3	15	47
Ireland,-----	57	31.5	19	38
Russia, Poland,-----	6	4.4	6	2
Italy,-----	18	9.9	3	15
Britain,-----	8	4.4	5	3
Teutonic,-----	5	2.8	1	4
Scandinavian,-----	2	1.1	1	1
Latin,-----	1	.55	--	1
Canada,-----	17	9.4	4	13
Baltic,-----	--	--	--	--
Others,-----	1	.55	--	1
Not stated,-----	2	1.1	1	1

¹ This was a sample group selected at random from 1517 cancer cases nursed during the years 1922-1926.

rates per 100,000 in Boston for the years 1921, 1922 and 1923, by nationality, were as follows: United States, 83.7, Ireland, 302.0, Russia and Poland, 141.5, Italy, 75.1, Britain, 284.7, Teutonic countries, 369.0, Scandinavia, 223.3, Canada, 267.0. Similar variations between native and foreign-born are shown in the Federal statistics of mortality covering the entire registration area. These statistics indicate that cancer patients cared for by public health nurses will

2 Financial and personal resources

Women over fifty years old, particularly those born in foreign lands, frequently are dependent for support on relatives or, in their absence, on charitable agencies. Two-thirds of the beneficiaries of European old-age pension systems are these old women whose families have been unable to provide for their care. A canvass of a typical Boston district* for the purpose of discovering

*Aged Clients of Boston Social Agencies. Chapters I, II, III.

the means of support of residents 65 years old or over reveals the limited financial resources of the portion of the population most subject to cancer. About half of this aged population were widowed. Of the 615 aged persons for whom information was obtained, 38 per cent were reported as financially dependent. The proportion of dependents among the women was even greater, as 186 of the 305 visited, or about 65 per cent, were without independent means of support. This high proportion of aged depend-

life. Only a third (35 per cent) of the cancer patients in the sample group from the Community Health Association carried the small insurance policies which entitled them to assistance in paying for the services of the nurses. Forty-two per cent stated definitely that they had no insurance, and it is probable that this was true also of the remaining 23 per cent for whom there were no insurance data. The patients who lacked this slight protection so common among the thrifty poor usually were housewives or do-

TABLE 2 FORMS OF TREATMENT OF A SAMPLE GROUP OF CANCER PATIENTS CARED FOR BY THE BOSTON COMMUNITY HEALTH ASSOCIATION, CLASSIFIED BY BIRTHPLACES OF MATERNAL PARENTS

Birthplace of mother	Patients of specified maternity who received medical treatment stated below								
	Doctor in home			Public health nurse	Hospital				
	Family doctor	Specialist	Private nurse		Examination	Operation	Out-patient department	X-ray	Radium
Total,-----	177	16	12	181	81	50	12	3	6
United States,--	60	4	5	62	29	17	2	1	2
Ireland,-----	56	9	1	57	21	13	5	--	3
Russia-Poland,--	8	--	1	8	4	2	--	--	--
Italy,-----	18	2	2	18	6	3	3	2	--
Britain,-----	8	--	--	8	5	3	1	--	--
Teutonic,-----	4	--	1	5	2	1	--	--	--
Scandinavia,---	2	--	--	2	1	1	--	--	--
Latin,-----	1	--	--	1	1	1	--	--	--
Canada,-----	17	1	2	17	10	7	1	--	1
Other,-----	1	--	--	1	1	1	--	--	--
Not stated,----	2	--	--	2	1	1	--	--	--

ents was found also in the State wide investigation of the Massachusetts Commission on Old-Age Pensions. Their report states (p 57), "Of the 17,357 persons interviewed 65 years of age and over who gave definite information concerning property or income 7,743, or nearly 45 per cent of the total, had less than \$5,000 property and less than \$1,000 income either singly or with their spouses. For this group as a whole, about 35 per cent were self-supporting and nearly 65 per cent were partially or entirely supported by others." Old age pension bills, which have been presented in the Legislatures of twenty States, have been advocated because of the general conviction that the aged find it difficult to procure the bare necessities of

mestic servants. Over half of the sample group of cancer patients nursed by the Community Health Association were engaged in domestic labors which bring little or no returns in money. Advocates of the prompt procuring of the expensive medical services required by cancer patients have made insufficient allowance for the financial incompetence of the persons most subject to the disease.

The personal resources of the cancer patients often were as limited as their financial. They frequently lived with the families of married sons or daughters, and gave some assistance in household tasks and the care of children. Unmarried adult women who are not gainfully employed are found but seldom in such households.

The sick must be cared for by busy housewives who rarely can afford hired help. But the outlook during serious illness for those with established claims on family groups,—however limited their resources,—is fortunate in comparison with that of elderly persons who live alone. Their savings may be exhausted by earlier medical treatments, so that terminal care must be

ferences with surviving relatives who had passed through the ordeal of nursing such patients in overcrowded homes where there were young children suggested extenuations for the apparent heartlessness of these sons or daughters. The elderly cancer victims must sometimes have been acutely conscious of their dependent relationships and unwilling to incur unnecessary

TABLE 3 CONDITION ON DISCHARGE OF PATIENTS NURSED BY THE BOSTON COMMUNITY
HEALTH ASSOCIATION

			1			
			A - TOTAL PATIENTS NURSED			
Year	Number of Patients	Number of Visits	Number of patients nursed in specified years whose condition was as stated			
			Not			
			Cured	Improved	Improved	Dead
1922-1926	168099	965236	113508	29956	20947	5688
1922	26194	219492	13391	6826	3278	699
1923	28815	224145	16789	8146	3126	754
1924	44862	152451	34205	4984	4936	757
1925	34858	147827	25756	3961	4466	695
1926	33370	221321	23387	4059	5141	783

			2			
			B - CANCER PATIENTS			
Year	Number of Patients	Number of Visits	Number of patients nursed in specified years whose condition was as stated			
			Not			
			Cured	Improved	Improved	Dead
1922-1926	1517	27632	63	270	630	554
1922	337	7779	17	57	138	125
1923	330	5670	21	69	121	119
1924	293	4966	9	51	140	93
1925	270	4176	10	46	112	102
1926	287	5041	6	47	119	115

1
Average number of visits per patient, 5.7

2
Average number of visits per patient, 19.2

sought in hospitals giving unpaid services. Only two private hospitals, willing to receive such patients, are located in or near Boston. Those who cannot be admitted may have no resource other than the hospitals maintained in connection with city or State institutions which give shelter to the sad company who reach the end of life without money or friends. About a third of the cancer patients found at the Long Island Hospital said they had no relatives, but one in four of the women and one in ten of the men claimed that they had living children who for various reasons, were unable or unwilling to give the difficult terminal care required. Con-

expenses. Pathetic instances were met with in the field work where these aged dependents concealed their sufferings and refused to permit the calling of a doctor until within two or three weeks of death. There were many households where patients might well have hesitated before adding the small fees of the visiting nurse to the burden of their support. Their own or the family self-respect often forbade the seeking of the charitable assistance offered in Boston's numerous medical clinics. An understanding of these complex family and financial situations, common among cancer patients of the class most frequently attended by visiting nurses, is neces-

the means of support of residents 65 years old or over reveals the limited financial resources of the portion of the population most subject to cancer. About half of this aged population were widowed. Of the 615 aged persons for whom information was obtained, 38 per cent were reported as financially dependent. The proportion of dependents among the women was even greater, as 186 of the 305 visited, or about 65 per cent, were without independent means of support. This high proportion of aged dependent life. Only a third (35 per cent) of the cancer patients in the sample group from the Community Health Association carried the small insurance policies which entitled them to assistance in paying for the services of the nurses. Forty-two per cent stated definitely that they had no insurance, and it is probable that this was true also of the remaining 23 per cent for whom there were no insurance data. The patients who lacked this slight protection so common among the thrifty poor usually were housewives or do-

TABLE 2. FORMS OF TREATMENT OF A SAMPLE GROUP OF CANCER PATIENTS CARED FOR BY THE BOSTON COMMUNITY HEALTH ASSOCIATION, CLASSIFIED BY BIRTHPLACES OF MATERNAL PARENTS.

Birthplace of mother	Patients of specified maternity who received medical treatment stated below								
	Doctor in home			Public health nurse	Hospital				Radium
	Family doctor	Special- ist	Private nurse		Exami- nation	Opera- tion	Out-patient department	X-ray	
Total,-----	177	16	12	181	61	50	12	3	6
United States,-	60	4	5	62	29	17	2	1	2
Ireland,-----	56	9	1	57	21	13	5	--	3
Russia-Poland,-	8	--	1	8	4	2	--	--	--
Italy,-----	18	2	2	18	6	3	3	2	--
Britain,-----	8	--	--	8	5	3	1	--	--
Teutonic,-----	4	--	1	5	2	1	--	--	--
Scandinavia,--	2	--	--	2	1	1	--	--	--
Latin,-----	1	--	--	1	1	1	--	--	--
Canada,-----	17	1	2	17	10	7	1	--	1
Other,-----	1	--	--	1	1	1	--	--	--
Not stated,----	2	--	--	2	1	1	--	--	--

ents was found also in the State-wide investigation of the Massachusetts Commission on Old-Age Pensions. Their report states (p. 57), "Of the 17,357 persons interviewed 65 years of age and over who gave definite information concerning property or income 7,743, or nearly 45 per cent of the total, had less than \$5,000 property and less than \$1,000 income either singly or with their spouses. For this group as a whole, about 35 per cent were self-supporting and nearly 65 per cent were partially or entirely supported by others." Old age pension bills, which have been presented in the legislatures of twenty States, have been advocated because of the general conviction that the aged find it difficult to procure the bare necessities of domestic servants. Over half of the sample group of cancer patients nursed by the Community Health Association were engaged in domestic labors which bring little or no returns in money. Advocates of the prompt procuring of the expensive medical services required by cancer patients have made insufficient allowance for the financial incompetence of the persons most subject to the disease.

The personal resources of the cancer patients often were as limited as their financial. They frequently lived with the families of married sons or daughters, and gave some assistance in household tasks and the care of children. Unmarried adult women who are not gainfully employed are found but seldom in such households.

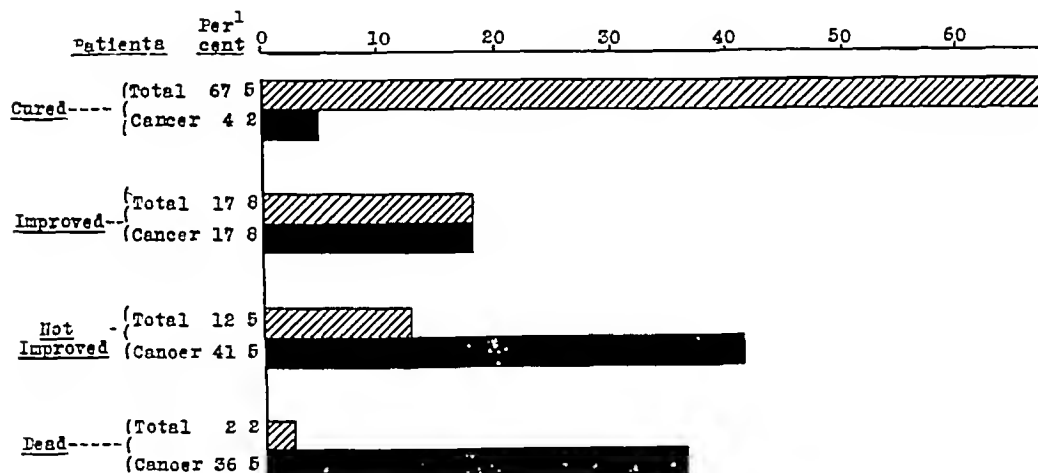
cancer may attack any part of the body, the resulting morbidity is not that of a single disease but of all the varied afflictions to which the human organism may be subjected. Nurses attending cancer patients must be skillful in the application of a great variety of surgical dressings, they give medicated or simpler enemas and douches, they make use of the catheter, they assist patients to breathe or take nourishment by means of tubes, and they administer opiates or other sedatives. Patients with some forms of cancer often suffer from extreme nausea, and incontinence is common during the terminal weeks

of the poor be prepared to give the continuous services which will relieve the patients of all avoidable suffering?

The records of the Community Health Association during a five-year period show that over a third (36.4 per cent) of the cancer patients were discharged to their families (Table 4, Chart II). From this percentage must be taken the 22 per cent—largely post-operative cases—who were reported as cured or improved at the time of discharge. The remaining 14.4 per cent would show the proportion of families whose members felt competent to continue with-

CHART I

CONDITION ON DISCHARGE OF ALL PATIENTS AND OF CANCER PATIENTS
CARED FOR BY THE BOSTON COMMUNITY HEALTH ASSOCIATION, 1922-1926



¹

Numbers will be found in Table 3

of the disease. Exceptional demands on the skill and fortitude of the nurse may be made when she gives cancer victims the varied forms of general care required for all bed-ridden patients.

The nurse's ability to instruct the unskilled attendants who wait on the cancer patients is of even greater importance than the services given during her visits. Assistants, usually practical rather than trained nurses, were employed in only one in fourteen of the sample group of cases studied (Table 2). Frequently the help of the visiting nurses was sought only when the end was near and the patients' relatives had exhausted their resources and endurance. Yet it has been estimated that the period of terminal care, which should approach in skill that given in a hospital, averages between four and five months. How can the clumsy, untrained nurses

out and the care required for terminal cases. One fourth of these patients were discharged to care other than that which could be given by their families, and in over a third (36.5 per cent) the relatives or friends, with guidance and assistance from the visiting nurses, gave more or less efficient care until death brought relief to the sufferers. (Chart II)

Cost of assistance in home care of cancer patients

About one visit out of every thirty-five made during the past five years by nurses of the Boston Community Health Association has been to cancer cases (Table 3). A total of 27,632 visits, or an average of over five thousand per annum, was required for this part of their services. The average number of visits per patient was 5.7 for all those cared for, and 18.2 for the cancer pa-

sary to the proper interpretation of the statistics of services rendered cancer patients by nurses of the Community Health Association

3 Nursing services rendered cancer patients

The radical variation of the case histories of the cancer patients from those of the general run is evident from the summaries presented in the accompanying charts and tables (Charts I and II, Tables 3 and 4) While two out of three of the entire group of patients nursed during

of the victims of cancer were being attended by the Community Health nurses at the time of death, and the unimproved two-fifths (41.5 per cent) could expect no other termination to the disease

The need of dealing worthily with this large group in the presence of death presents a solemn challenge to the ethical and spiritual values of modern social services Boston physicians and nurses quite generally evade the issues by adopting a policy of attempted deception and conceal

TABLE 4 CARE TO WHICH PATIENTS DISCHARGED FROM THE BOSTON COMMUNITY HEALTH ASSOCIATION WERE TRANSFERRED

A - TOTAL PATIENTS NURSED						
Year	Number of Patients	Number of deaths	Number of patients nursed in specified years who were transferred to			
			Hospitals			
			Family	Out-patient Department	House	Other
1922-1926	169099	3668	130873	3376	10449	19713
1922	26194	699	20888	622	1877	2108
1923	28815	754	23026	548	1358	3129
1924	44862	757	38348	526	2380	2851
1925	34858	695	27991	688	1940	3544
1926	33370	783	20620	992	2694	8081

B - CANCER PATIENTS						
Year	Number of Patients	Number of deaths	Number of patients nursed in specified years who were transferred to			
			Hospitals			
			Family	Out-patient Department	House	Other
1922-1926	1517	574	552	32	194	185
1922	337	125	121	6	43	42
1923	330	119	121	7	44	39
1924	293	95	126	5	38	31
1925	270	102	101	6	31	50
1926	287	115	83	8	38	43

the past five years were cured at the time of discharge, this was true of only one in twenty-five of those with diagnoses of some form of cancer. The proportions who showed improvement at the time of discharge were about the same in the two groups. The cancer patients with these more favorable prognoses were chiefly those who had been referred to the Community Health Association for post-operative care.

More than three in every four (78 per cent) of the cancer patients nursed had a hopeless outlook, while this was true of about one in seven of the entire group of patients. If those suffering from cancer were eliminated from the totals of the patients nursed, these differences would be even greater. Over a third (36.5 per cent)

Just how far they succeed in keeping a knowledge of the truth from the patient is open to question. Contact during field work with relatives of cancer victims revealed an amazing amount of superstition and misunderstanding. The reticence of doctors and nurses often had permitted the growth of the fear that there was something disgraceful about the disease. Nurses are expected to adopt policies prescribed by the doctors in charge, but, when the truth is permitted, they should give instructions which will dispel such misapprehensions.

The amount and variety of the nursing care required, as well as the discouraging prognoses, reveal the extreme difficulties which must be met when dealing with this dreaded disease. Since

Although the Boston Community Health Association is making a generous contribution to the home care of cancer patients it is evident that the services which can be supplied by such a privately-supported organization must fall short of what a civilized community might wish to guarantee to this group of sufferers. Private philanthropy may be unable to meet this social need, so that in the future public support which has been enlisted to supply hospital care may be required also in order to make possible adequate home care of cancer patients.

CONNECTICUT STATE DEPARTMENT OF HEALTH

APPROVED LABORATORIES

In accordance with Regulation 40 of the State Sanitary Code all those operating laboratories for diagnostic purposes (except laboratories operated by physicians for their personal convenience) must register annually with the State Department of Health giving the name of such laboratory its location, and name of person or persons owning or operating the same. After inspection laboratories that are found to conform to the standards required by the State Department of Health will be given a certificate of approval.

The work of inspection has continued since 1924 and the thirteen laboratories in nine towns approved at that time have now increased to twenty-four in fourteen towns in 1928.

In addition all laboratories making bacteriological milk and cream examinations must be approved according to Legislative acts of 1925. Nine of these were approved in seven towns in 1928.

Laboratories so approved appear in the following lists those starred being approved for diagnostic work under the Sanitary Code and for milk examination under the State Statutes.

DIAGNOSTIC LABORATORIES APPROVED

City Department of Health Laboratory	Bridgeport
Bristol Hospital Laboratory	Bristol
Griffin Hospital Laboratory	Derby
Greenwich Hospital Laboratory	Greenwich
Laboratory of Dr Chas T Beach	Hartford
The Hall Wilson Laboratory of the Hartford Hospital	Hartford
Travelers Insurance Company Laboratory	Hartford
Trinity College Bacteriological Laboratory	Hartford
*City Department of Health Laboratory	Hartford
*Newlands Sanitary Laboratory	Hartford
The Lucie A Peck Pathological Lab of the Meriden Hospital	Meriden
Laboratory of Connecticut State Hospital for Insane	Middletown
*City Department of Health & Middlesex Hospital Labs	Middletown
*City Department of Health Laboratory	New Britain
Grace Hospital Laboratory	New Haven
*City Department of Health Laboratory	New Haven
Laboratory of Lawrence & Memorial Associated Hospitals	New London
W W Backus Hospital Laboratory	Norwich
Laboratory of Norwich State Hospital for Insane	Norwich
Manchester Memorial Hospital Laboratory	So Manchester

Laboratory of Cheney Brothers	So Manchester
Stamford Hospital Laboratory	Stamford
City Department of Health Laboratory	Stamford
Charlotte Hungerford Hospital Laboratory	Torrington

LABORATORIES APPROVED FOR MILK EXAMINATION

Laboratory of Mitchell Dairy Company	Bridgeport
Bridgeport Department of Health Laboratory	Bridgeport
Brook Hall Dairy Company Laboratory	Hamden
Hartford Department of Health Laboratory	Hartford
Newlands Sanitary Laboratory	Hartford
City Department of Health & Middlesex Hospital Labs	Middletown
New Britain Department of Health Laboratory	New Britain
New Haven Department of Health Laboratory	New Haven
Waterbury Department of Health Laboratory	Waterbury

COMMON FALLACIES ABOUT CAUSES OF CANCER

Dr George A Soper of the American Society for the Control of Cancer reports several popular fallacies with respect to the causes or treatment of cancer. Among recognized mistaken beliefs are the following: Too much salt too little salt vitamin starvation too much food the eating of tomatoes and meat, especially pork. Some blame coal smoke glaze from enamel or aluminum utensils and too sedentary occupations.

Dr Soper believes that no sudden discovery of the cause or cure of cancer is likely to be made.

The Society will publish statistics relating to the prevalence of cancer during this year up to 1927.

A symposium on cancer will be held in New York City soon and recently endorsed theories either for prevention or cure will be discussed by prominent specialists.

A POSTER COMPETITION FOR A DESIGN TO BE USED IN THE CANCER CAMPAIGN

The American Society for the Control of Cancer in conjunction with the Art Alliance of America will receive competitive designs to be used on posters in the Cancer Campaign. Three cash prizes of \$500 \$250 and \$100 have been provided for the best designs.

The jury of award includes Charles D Gibson Conde Nast, Elmer Brown, Mason F J Rigney, and S Casey, Ray Greenleaf, S W Revburn and Alon Bement.

Particulars may be obtained on application to the New York City Committee of the American Society for the Control of Cancer, 34 East Seventy-fifth Street.

MASSACHUSETTS TUBERCULOSIS LEAGUE

At the Annual Summer Health Camp Meeting held at the Hotel Bancroft in Worcester by the Massachusetts Tuberculosis League, Mr William N Leonard, Boston Medical Publisher and Dr Nahum R Pillsbury, Superintendent of the Norfolk County Hospital were the principal speakers.

Mr Leonard reported interestingly on the activities of the Cambridge Health Camp expressing his confidence that Massachusetts would set before the country the same example of leadership in Summer Health Camps that it has always in every department of the educational program.

tients The average per patient for the sample group of closed cases was 28.4, but over half received less than ten, and nearly a third (30 per cent) less than five visits. The average was raised by five patients each of whom was attended over 200 times—one received 1080 visits. The total services given amount to a formidable figure, yet it is evident that the bulk of care must be by amateur, home nurses.

Eighty-five cents per visit was the fee usually charged patients able to pay or was the amount paid by the two insurance companies which supplied this service to policy holders. The cost per visit to the Association has varied during

necessary to give public assistance also in order to provide more fully for adequate home care?

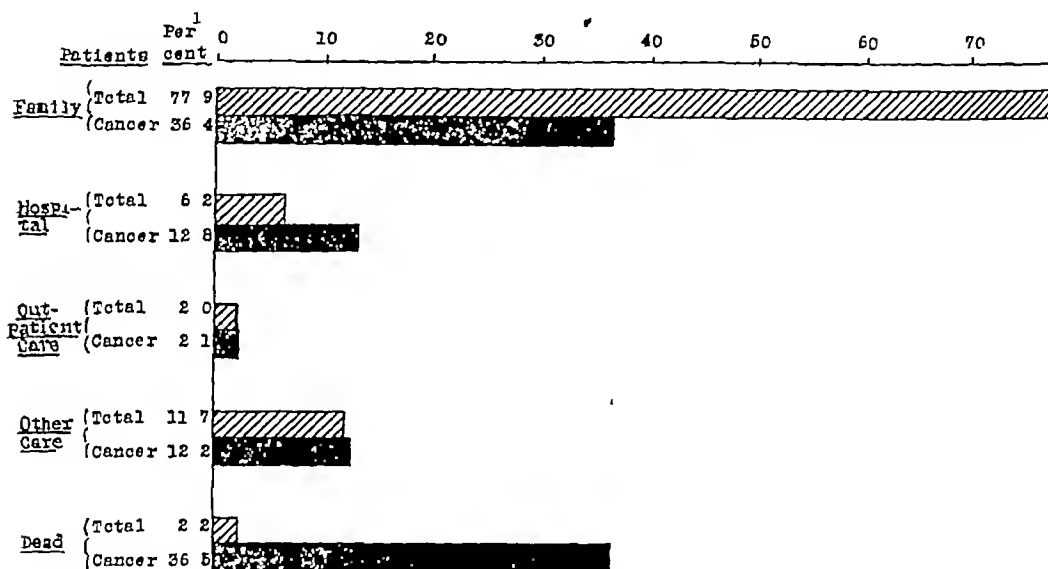
SUMMARY OF CONCLUSIONS

Terminal care of cancer patients must be given chiefly in their homes, both because of the difficulty of supplying the large number of hospital beds needed for cancer victims and because many who die of cancer—particularly women—will refuse to be separated from their families when stricken with a mortal disease.

The persons most subject to cancer come chiefly from population groups with small earning capacity, a high proportion have little or no

CHART II

TYPES OF CARE TO WHICH PATIENTS WERE TRANSFERRED AFTER DISCHARGE FROM THE BOSTON COMMUNITY HEALTH ASSOCIATION - ALL PATIENTS AND CANCER PATIENTS 1922 - 1926



Numbers will be found in Table 4

the five years studied, but has approached one dollar. A total of 5,934 visits were made to a group of 209 cases studied intensively for which the patients and insurance companies paid \$2,417.20. Thus about forty per cent of the services were paid for and the Association contributed the remaining sixty per cent. The tremendous cost of the care of cancer patients is evident when the limited services given by this one organization for a period of five years are found to amount to \$27,600, of which approximately \$16,500 could not be paid from resources of the patients or their families. Yet no one familiar with the history of the disease can be satisfied that the care given these sufferers was adequate to their needs. Does this present a situation with which private philanthropy cannot cope? Massachusetts legislators have provided for a State cancer hospital and for clinics in important population centers. Will it be

income and inadequate resources from savings and insurance. Their earlier family ties frequently have been broken, so that they may live as dependents with a younger generation. They often are in homes where space and incomes are insufficient for growing children, and where no help can be employed for household tasks. Expensive medical and nursing care is impossible, and they even hesitate to make full use of the relatively inexpensive services of visiting nurses. Varied and difficult nursing care is demanded by terminal cancer patients. Special expert services may be given by visiting nurses but these fail to meet adequately the needs of the patients. Careful instruction of the inexperienced persons, who must be depended on to give the continuous care required, is an indispensable part of any program aimed at the prevention of unnecessary suffering by the unfortunate victims of cancer.

Although the Boston Community Health Association is making a generous contribution to the home care of cancer patients it is evident that the services which can be supplied by such a privately-supported organization must fall short of what a civilized community might wish to guarantee to this group of sufferers. Private philanthropy may be unable to meet this social need so that in the future public support which has been enlisted to supply hospital care may be required also in order to make possible adequate home care of cancer patients.

CONNECTICUT STATE DEPARTMENT OF HEALTH

APPROVED LABORATORIES

In accordance with Regulation 40 of the State Sanitary Code all those operating laboratories for diagnostic purposes (except laboratories operated by physicians for their personal convenience) must register annually with the State Department of Health giving the name of such laboratory its location and name of person or persons owning or operating the same. After inspection laboratories that are found to conform to the standards required by the State Department of Health will be given a certificate of approval.

The work of inspection has continued since 1924 and the thirteen laboratories in nine towns approved at that time have now increased to twenty-four in fourteen towns in 1928.

In addition all laboratories making bacteriological milk and cream examinations must be approved according to Legislative acts of 1925. Nine of these were approved in seven towns in 1928.

Laboratories so approved appear in the following lists those starred being approved for diagnostic work under the Sanitary Code and for milk examination under the State Statutes.

DIAGNOSTIC LABORATORIES APPROVED

City Department of Health Laboratory	Bridgeport
Bristol Hospital Laboratory	Bristol
Griffin Hospital Laboratory	Derby
Greenwich Hospital Laboratory	Greenwich
Laboratory of Dr Chas T Beach	Hartford
The Hall Wilson Laboratory of the Hartford Hospital	Hartford
Travelers Insurance Company Laboratory	Hartford
Trinity College Bacteriological Laboratory	Hartford
*City Department of Health Laboratory	Hartford
*Newlands Sanitary Laboratory	Hartford
The Lucy A Peck Pathological Laboratory of the Meriden Hospital	Meriden
Laboratory of Connecticut State Hospital for Insane	Middletown
*City Department of Health & Middlesex Hospital Labs	Middletown
*City Department of Health Laboratory	New Britain
Grace Hospital Laboratory	New Haven
*City Department of Health Laboratory	New Haven
Laboratory of Lawrence & Memorial Associated Hospitals	New London
W W Backus Hospital Laboratory	Norwich
Laboratory of Norwich State Hospital for Insane	Norwich
Manchester Memorial Hospital Laboratory	So Manchester

Laboratory of Cheney Brothers	So Manchester
Stamford Hospital Laboratory	Stamford
City Department of Health Laboratory	Stamford
Charlotte Hungerford Hospital Laboratory	Torrington

LABORATORIES APPROVED FOR MILK EXAMINATION

Laboratory of Mitchell Dairy Company	Bridgeport
Bridgeport Department of Health Laboratory	Bridgeport
Brook Hall Dairy Company Laboratory	Hamden
Hartford Department of Health Laboratory	Hartford
Newlands Sanitary Laboratory	Hartford
City Department of Health & Middlesex Hospital Labs	Middletown
New Britain Department of Health Laboratory	New Britain
New Haven Department of Health Laboratory	New Haven
Waterbury Department of Health Laboratory	Waterbury

COMMON FALLACIES ABOUT CAUSES OF CANCER

Dr George A Soper of the American Society for the Control of Cancer reports several popular fallacies with respect to the causes or treatment of cancer. Among recognized mistaken beliefs are the following: Too much salt, too little salt, vitamin starvation, too much food, the eating of tomatoes and meat especially pork. Some blame coal smoke, grease from enamel or aluminum utensils and too sedentary occupations.

Dr Soper believes that no sudden discovery of the cause or cure of cancer is likely to be made.

The Society will publish statistics relating to the prevalence of cancer during this year up to 1927.

A symposium on cancer will be held in New York City soon and recently endorsed theories either for prevention or cure will be discussed by prominent specialists.

A POSTER COMPETITION FOR A DESIGN TO BE USED IN THE CANCER CAMPAIGN

The American Society for the Control of Cancer in conjunction with the Art Alliance of America will receive competitive designs to be used on posters in the Cancer Campaign. Three cash prizes of \$500, \$250 and \$100 have been provided for the best designs.

The jury of award includes Charles D Gibson, Conde Nast, Elmer Brown, Mason F J Rigney, and S Case, Ray Greenleaf, S W Revhurn and Alou Bement.

Particulars may be obtained on application to the New York City Committee of the American Society for the Control of Cancer, 34 East Seventy-fifth Street.

MASSACHUSETTS TUBERCULOSIS LEAGUE

At the Annual Summer Health Camp Meeting held at the Hotel Bancroft in Worcester by the Massachusetts Tuberculosis League, Mr William N Leonard, Boston Medical Publisher and Dr Arthur R Pillsbury, Superintendent of the Norfolk County Hospital were the principal speakers.

Mr Leonard reported interestingly on the activities of the Cambridge Health Camp expressing his confidence that Massachusetts would set before the country the same example of leadership in Summer Health Camps that it has always in every department of the educational program.

tients The average per patient for the sample group of closed cases was 28.4, but over half received less than ten, and nearly a third (30 per cent) less than five visits. The average was raised by five patients each of whom was attended over 200 times—one received 1080 visits. The total services given amount to a formidable figure, yet it is evident that the bulk of care must be by amateur, home nurses.

Eighty-five cents per visit was the fee usually charged patients able to pay or was the amount paid by the two insurance companies which supplied this service to policy holders. The cost per visit to the Association has varied during

necessary to give public assistance also in order to provide more fully for adequate home care?

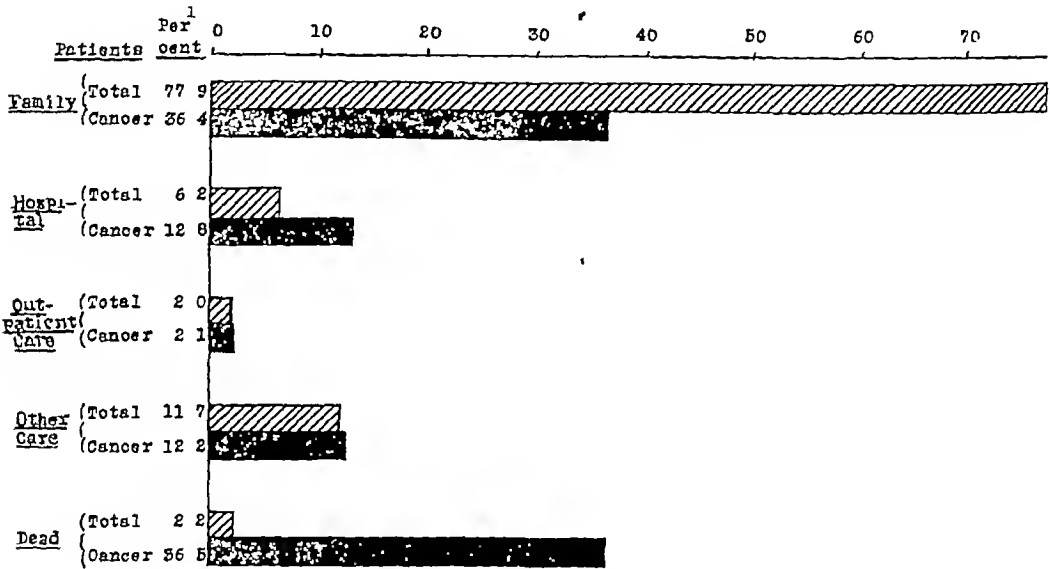
SUMMARY OF CONCLUSIONS

Terminal care of cancer patients must be given chiefly in their homes, both because of the difficulty of supplying the large number of hospital beds needed for cancer victims and because many who die of cancer—particularly women—will refuse to be separated from their families when stricken with a mortal disease.

The persons most subject to cancer come chiefly from population groups with small earning capacity, a high proportion have little or no

CHART II

TYPES OF CARE TO WHICH PATIENTS WERE TRANSFERRED AFTER DISCHARGE FROM THE BOSTON
COMMUNITY HEALTH ASSOCIATION - ALL PATIENTS AND CANCER PATIENTS 1922 - 1926



Numbers will be found in Table 4

the five years studied but has approached one dollar. A total of 5,934 visits were made to a group of 209 cases studied intensively for which the patients and insurance companies paid \$2,417.20. Thus about forty per cent of the services were paid for and the Association contributed the remaining sixty per cent. The tremendous cost of the care of cancer patients is evident when the limited services given by this one organization for a period of five years are found to amount to \$27,600, of which approximately \$16,500 could not be paid from resources of the patients or their families. Yet no one familiar with the history of the disease can be satisfied that the care given these sufferers was adequate to their needs. Does this present a situation with which private philanthropy cannot cope? Massachusetts legislators have provided for a State cancer hospital and for clinics in important population centers. Will it be

income and inadequate resources from savings and insurance. Their earlier family ties frequently have been broken, so that they may live as dependents with a younger generation. They often are in homes where space and incomes are insufficient for growing children, and where no help can be employed for household tasks. Expensive medical and nursing care is impossible, and they even hesitate to make full use of the relatively inexpensive services of visiting nurses. Varied and difficult nursing care is demanded by terminal cancer patients. Special expert services may be given by visiting nurses, but these fail to meet adequately the needs of the patients. Careful instruction of the inexperienced persons, who must be depended on to give the continuous care required, is an indispensable part of any program aimed at the prevention of unnecessary suffering by the unfortunate victims of cancer.

arrhythmia He had no edema or ascites February 2 he died.

DISCUSSION

BY RICHARD C CABOT, M.D.

NOTES ON THE HISTORY

The history up to the point of the first examination in this hospital is of gastric symptoms leading to three gastric operations, the first of which was a gastro-enterostomy At this date there were a good many more gastro-enterostomies done without organic disease in the stomach than there are now, so that we cannot be sure that they found either ulcer or cancer or any other organic disease at the time they did that first operation

What went on later, when he had this sudden dyspnea and hiccough? It does not seem as if that could be due to gastro-intestinal disease alone It seems as if there must be some heart or kidney trouble or both, to produce these symptoms, if they are correctly reported It is a queer history, with a good deal to suggest to me that it is not correct In the sudden vomiting of blood we have a history which might go with cirrhosis of the liver,—an entirely independent disease

So that the possibilities in my mind as I begin to read the physical examination are of gastric ulcer or cancer, more probably ulcer, of some cardiac trouble with or without renal trouble, and of cirrhosis of the liver

NOTES ON THE PHYSICAL EXAMINATION

If this record is correct we have an enormous enlargement of the heart and may connect that with the dyspnea complained of shortly before his entrance

We should like to know a little more about the urine, but all the evidence we have is against the presence of any renal disease

There is a moderate secondary anemia from loss of blood

These stomach examinations are consistent with some stomach disease, more probably ulcer than cancer in view of the presence of hydrochloric acid.

Whether the operation was to be on his prostate or on his urethra or whether they were going to try to do something more to his stomach I do not know

It is striking that there is so little evidence of passive congestion in spite of such apparently poor heart action

DIFFERENTIAL DIAGNOSIS

I feel quite uncertain as to what is to be found here We can be relatively certain that an enlarged and presumably weakened heart was part of what ailed him There is no evidence of any valvular disease I think we should say, there-

fore, that it is a case of the commonest type of heart trouble, namely, hypertensive, although he has not at present any hypertension Then, although he has this local trouble in his urinary tract, I do not see how that can have any particular relation to his death He was in such poor condition that he could easily have the urinary symptoms here described without there being anything to affect him seriously

As to what is to be found in his stomach, I do not think I can say anything more, because this case came before the days of X-rays and shows how much we have come to depend on them. There was vomiting of altered blood That ought to mean an organic lesion, ulcer or cancer As he lived to fifty-two without any symptoms, there is a good deal to suggest cancer On the other hand he is not emaciated There is no evidence of great loss of weight, and he has had hydrochloric acid in his stomach contents I feel in doubt as to what is wrong in his stomach There seem to me three possibilities, ulcer, cancer, and nothing at all, the last not so probable in view of the amount of blood that he seems to have vomited But between ulcer and cancer I think we have not enough evidence to decide

At his age, with so short a history, is it safer to say cancer? Against that is the fact that he got so much relief after one of his operations that on the first of November previous to the January when he came here he was said to be as strong as ever That does not seem at all probable with a patient with unrelieved cancer of the stomach

As to the possibilities of cirrhosis of the liver which I spoke of earlier, we are given nothing in the way of information from our examination in this hospital Nothing is said about his liver He does not show any ascites, which so far as it goes is against cirrhosis I think we had better say nothing about cirrhosis in our clinical diagnosis

All that I can feel any confidence about is a hypertrophied and dilated heart, presumably without valve lesion, and some organic stomach lesion, as to which I am rather equally divided between ulcer and cancer, perhaps favoring ulcer a little

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Obstruction near the pylorus
Cardiac dilatation and hypertrophy
Paroxysmal tachycardia
Myocarditis?
Secondary anemia
Cirrhosis of the liver?

DR CABOT'S DIAGNOSIS

Hypertensive heart disease
Hypertrophy and dilatation of the heart
Gastric ulcer?
Gastric cancer?
Secondary anemia

Case Records
at the
Massachusetts General Hospital

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, MD

F M PAINTER, A.B., ASSISTANT EDITOR

CASE 14051

HICCUP, VOMITING AND PALPITATION

MEDICAL DEPARTMENT

A milkman fifty-two years old entered January 19

He was a perfectly healthy man until the first of the previous August. Then he suddenly began to have nausea and to vomit all food. He could eat a full meal without pain, but in a short time or the following day or sometimes on the second day he would vomit all he had eaten. August 7 and 16 he was operated upon in a hospital in a neighboring city. Following this he retained very little by mouth and vomited black-brown material at times. September 21 he was operated on a third time with great relief. A letter from his physician gave the information that at the first operation a gastro-enterostomy was performed. Later post-operative peritonitis was drained. Finally obstruction by adhesions was relieved. Rectal examination showed two external hemorrhoids. By November 1 he was eating heartily, chopping wood and as strong as anyone. December 25 he suddenly became dyspneic, short of breath, and began to have hiccup, vomiting and palpitation. He was unable to do much on account of dyspnea on exertion. He slept very little. He used several pillows but had no orthopnea. He had considerable nycturia for the first time. He dreamed repeatedly that he was walking the street and could get no water. He hiccuped continually and vomited nearly all food. For three weeks he had taken nothing but scalded milk and water. January 16 when in bed he suddenly vomited a cup and a half of bright blood. Since that time he had had two or three watery bloody movements daily.

His father died of heart disease, his mother of "dropsy, jaundice and heart trouble."

He had had scarlet fever, three attacks of gonorrhea, the last at thirty-seven, a hard chancre at thirty-four followed by a rash. He had had strictures with operation. He had taken no liquor for five years. Before that he drank eight or ten glasses of whiskey a day, two glasses before breakfast, and had a drinking bout once in six months.

Clinical examination showed a fairly devel-

oped and nourished, anemic looking man with occasional hiccup. There was no evidence of great loss of weight. The breath had a marked fruity odor. The skin showed a very slight yellow tint. Mucous membranes pale. Apex in pulse of the heart in the fifth space 16 centimeters from midsternum, 45 centimeters outside the nipple line, corresponding with the left border of dullness, localized and tapping but fairly forcible, although there was marked irregularity in force. Right border of dullness 4 centimeters in the third interspace. No retromammary dullness. Rate at apex 180. Sounds sharp, short and snapping. Pulmonic second sound not heard at apex, greater than aortic second, both distant. (Thick chest wall.) No definite murmurs. Systolic blood pressure 110. Pulses equal, synchronous, markedly irregular in force, rhythm and rate, many beats not reaching the wrist. Small volume, normal tension. Artery walls a little thickened. Chest somewhat barrel shaped. Expansion poor. Transient medium râles scattered over the upper half of both lungs. Two linear operation scars from xiphoid to umbilicus. No masses or marked tenderness. Pupils and knee-jerks normal.

Temperature 99.2° to 96.4° with a terminal rise to 101.3°. Pulse 67 to 112. Respirations 20 to 24 with a terminal increase to 40.

Urine normal in amount, specific gravity 1.011 to 1.017, no albumin, sediment negative. Blood 18,600 to 12,000 leukocytes, 86 to 83 per cent polynuclears, hemoglobin 75 to 55 per cent, reds 3,000,000, moderate variation in size and shape. Wassermann not recorded. Stools red-brown or black at two of three examinations, guaiac positive or strongly positive at all of five. Vomitus brown at one of two examinations, thick coffee-ground sediment at another, guaiac positive or strongly positive at both, free hydrochloric acid at both.

The condition of the patient on admission was alarming. Later he lay in a mild stupor most of the time, but at times was remarkably bright. He retained his food well and slept well. The stools at first showed small amounts of fresh blood, perhaps from hemorrhoids. January 22 his bladder filled up and he had to be catheterized. Three strictures of moderate size were found. He was put on constant drainage. By January 29 he was vomiting two or three times a day. He slept with sedatives only two hours a night. A surgical consultant thought the patient could not stand operation. The strictures were treated by the South Surgical Department. For the next three days the patient vomited everything eaten. The vomitus was coffee grounds. He gradually failed. He had no pain. The heart beat was rapid and snapping, fairly forcible at first. The apex beat was practically always above 170. There were numerous extrasystoles. There was no marked respiratory

The afternoon of January 12 the temperature rose to 104°, the pulse to 160, the respirations to 40. His skin was cold, clammy and slightly cyanotic. The blood pressure was 90/40. The pulse was feeble and thready. There was slight dullness in the right chest. The abdomen was slightly tender throughout, with moderate spasm. He complained of no pain. There was no distention. Rare peristalsis was heard. A portable chest plate showed pneumothorax of the right pleural cavity with almost complete collapse of the right lung. The left lung field was less radiant than normal. Both diaphragms were high. The patient steadily failed, became comatose and that night died.

DISCUSSION

BY EDWARD L. YOUNG, JR. M.D.

There are various things that can be considered here, but I believe in a sixteen-year old boy the acute onset of a condition which has left a tender mass in the right lower quadrant with leukocytosis stands a very high chance of being an acute appendix with either an abscess around the perforated appendix or a heavy cake of omentum and edematous gut around the non-perforated appendix. A psoas abscess coming to the surface at that point is possible without previous symptoms pointing toward the back. A suppurating mesenteric adenitis is possible. A non-tuberculous psoasitis with an abscess is also possible. But I think that all three of those are rather poor second diagnoses. I should say from the description here that it was an appendix abscess, and the thing to do was to open it.

In a boy of this age, having had it for ten days, if that is the diagnosis the prognosis ought to be good, because a young person will get away with an untold amount of peritoneal sepsis.

DR. CABOT: Is it possible that you ought also to consider tuberculous peritonitis, cecal trouble, do you think?

DR. YOUNG: Other than a mesenteric adenitis?

DR. CABOT: In the cases I refer to we hear more about the localization in the cecal region.

DR. YOUNG: That is true, and a tuberculous peritonitis, if it did this, ought to have a secondary infection. I think to give this picture of abscess formation. I do not think we can rule it out.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Appendix abscess

PRE-OPERATIVE DIAGNOSIS

Appendix abscess

OPERATION

Gas ether. Through a low right rectus muscle splitting incision the peritoneum was opened without incident. The mass which had been

easily palpated before operation was encountered directly under the anterior abdominal wall. This mass was broken into on the lateral aspect of the cecum, the remaining part of the abdomen having first been carefully walled off. About three ounces of free fluid pus came from the abscess cavity. In an attempt to locate the appendix some omentum was removed. A fecalith free in the abdominal cavity was also found and taken out. Because of the extensive walling off of the abscess cavity it was thought unwise to persist in the attempt to find the appendix. A wick was placed in the pelvis and one to the lateral wall of the cecum and the wound closed.

FURTHER DISCUSSION

I think that is very good judgment, because if the sepsis is cleared up with drainage and a secondary appendectomy is necessary it is a safe thing to do later as compared with the risk of spreading virulent pus in the peritoneal cavity, which is up to the present time not infected.

On January 11, under normal conditions, we would consider this boy out of the woods and not worry about further trouble.

I think I saw this boy. I am not sure that this is the one, but if it is my reaction up to this point was just as I have said, that he was entirely out of danger. Then when this upset came it did not seem as though it were peritonitis because of audible peristalsis and lack of distention. At the same time, however, we recognized the fact that at necropsy peritonitis is very often reported when we do not get clinical evidence of it in the wards. Then the signs in the chest resulted in the chest plate.

DR. RICHARD DRESSER: In the left chest we see a very normal picture, the lung markings extending well out toward the periphery. Comparing the right side we see a very different picture. The periphery is very much darker than the corresponding area on the left and there is a total absence of lung markings in this area. The lung markings run out to about the mid-chest, and at this point we see a sharply defined margin which we presume is the edge of a collapsed lung. We would have no hesitancy in making a diagnosis of pneumothorax with collapse of the lung on the right side.

DR. YOUNG: What would the picture be if it were massive collapse?

DR. DRESSER: We should get a mediastinum coming over to fill in the space, also the diaphragm coming up. That would give complete dullness on the right side with the diaphragm outline obscured. Very often the dullness extends over the whole side of the chest. If the collapse is only partial we may see some normal lung in the upper portion of the chest.

DR. CABOT: Is the liver lower on the right than it ought to be?

DR. DRESSER: I should say it is normal.

DR. CABOT: Why doesn't it come down if that chest is full of air? I thought the liver and

ANATOMIC DIAGNOSES

1 *Primary fatal lesions*

Syphilitic aortitis

Slight fibrocalcareous endocarditis of the aortic valve

2 *Secondary or terminal lesions*

Hypertrophy and dilatation of the heart

Chronic passive congestion, general

Thrombus in the right auricular appendix and branch of the right pulmonary artery

Infarcts of the right lung

Hydropericardium

Acute fibrinous pericarditis, terminal

Hydrothorax

Septicemia, streptococcus

Leukoplakia and erosions of the esophagus

3 *Historical landmarks*

Chronic pleuritis, left

Scars of old operation wound, gastro-enterostomy

Chronic localized peritonitis

DR. TRACY B. MALLORY The anatomical findings do not help us much in explaining the symptoms of this case

The scars of two old operations were found in the abdominal wall, and two anastomoses had been made in the intestines, one a posterior gastro-enterostomy and another a lateral anastomosis of two loops of ileum. The posterior gastro-enterostomy was not made between the stomach and the duodenum but between the stomach and one of the very lower loops of ileum, and probably the second operation was the lateral anastomosis of the ileum which seems to have relieved him to some extent.

The stomach showed a rather thickened pylorus but no ulcer, no carcinoma, and no source for bleeding. It is possible that that thickening of the pylorus represents a healed ulcer, although apparently no definite evidence was found.

The most important finding was an enlarged heart, over 500 grams, with considerable arteriosclerosis of the aortic valve, and also a greatly dilated aorta with the characteristic appearance of luetic aortitis. So that it is not utterly impossible that his gastric symptoms might have been tabetic. The liver showed passive congestion. His lungs showed numerous infarcts, one as big as four centimeters in diameter, and I think probably the blood must have been conghed up rather than vomited. He had an acute terminal septicemia with streptococcus, and an acute purulent pericarditis. It is a rather blind case.

DR. EDWARD L. YOUNG You speak of a thickened pylorus. Is there such a condition as a primary hypertrophy of the pylorus coming on in adult life with symptoms of obstruction? I have met that twice clinically, did resection of

the pylorus for what I thought was cancer, and had the report come back both times that it was a fibrosis with obstruction of the pylorus.

DR. MALLORY I don't know. We certainly see a great deal of variety in the diameter of the pylorus at post-mortem. Sometimes it seems quite narrow, but ordinarily I have assumed that real fibrosis was presumably the result of a healed ulcer. You probably see more of that than I, Dr. Dresser.

DR. RICHARD DRESSER We do see cases in which we have stasis in the stomach and a good deal of spasm in the region of the pylorus with no organic lesion of the stomach or duodenum demonstrable. Perhaps some of these cases really have a fibrosis such as Dr. Young has mentioned, but I have never been able to make this diagnosis.

CASE 14052

AN UNUSUAL CAUSE FOR A FATAL OUTCOME

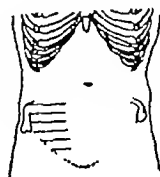
SURGICAL DEPARTMENT

A sixteen-year old American schoolboy entered January 7

For ten days he had had moderately severe non-radiating pain in the right lower quadrant and had felt a little feverish. His appetite had been poor and his bowels irregular. For the past four days he had felt ill enough to stay quietly at home.

No past history was obtained except that this was apparently his first attack.

Clinical examination Well nourished. Throat injected. In the right lower quadrant was a visible swelling (see diagram), apparently a mass



the size of an orange, very tender on deep palpation. There was moderate rigidity and moderate rebound tenderness over the mass. Rectal examination showed tenderness in the right iliac fossa, no mass.

Before operation chart and urine not recorded, leukocyte count 12,400.

January 7 operation was done. The patient made a good ether recovery. That night the temperature rose to 102°. Two days later it was normal and he was said to pass a little gas. He was taken out of Fowler's position and given fluids freely. In the afternoon he vomited two or three times. After a stomach lavage he felt well. January 11 he complained of a little pain in the lower abdomen. Some peristalsis was audible. He looked better. The chart was normal.

The New England Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1838

Published by THE MASSACHUSETTS MEDICAL SOCIETY
under the jurisdiction of the following named committee

For Three Years

JOHN W. BARTOL, M.D. FREDERICK T. LORI, M.D.
CHANNING FROTHINGHAM, M.D.

For Two Years

HOMER GAGE, M.D., *Chairman* EDWARD C. STREETER, M.D.
EDWARD W. TAYLOR, M.D.

For One Year

WILLIAM H. ROBERT, JR., M.D. ROGER I. LEE, M.D.
ROBERT B. OSGOOD, M.D.

EDITORIAL STAFF

DAVID L. EDSELL, M.D. STEPHEN RUSHMORE, M.D.
REID HUNT, M.D. HANS ZINSSER, M.D.
JOHN P. SUTHERLAND, M.D. BENJAMIN WHITE, PH.D.
GEORGE R. MINOT, M.D. HENRY R. VIETS, M.D.
FRANK H. LAHEY, M.D. ROBERT A. VIE, M.D.
SHIELDS WARREN, M.D.

WALTER P. BOWERS, M.D. *Managing Editor*

ASSOCIATE EDITORS

GEORGE G. SMITH, M.D. WILLIAM B. BREED, M.D.
JOSEPH GARLAND, M.D.

THE NEW HAMPSHIRE MEDICAL SOCIETY
PUBLICATION COMMITTEE

D. E. SULLIVAN, M.D. EMERY M. FITCH, M.D.
JOSEPH J. COBB, M.D.

THE VERMONT STATE MEDICAL SOCIETY
PUBLICATION COMMITTEE

WILLIAM G. RICKER, M.D. C. F. DALTON, M.D.
J. A. WARR, M.D.

SUBSCRIPTION TERMS \$6.00 per year in advance postage paid
for the United States Canada \$7.05 per year \$7.50 per year
for all foreign countries belonging to the Postal Union

Material for early publication should be received not later
than noon on Saturday. Orders for reprints must be sent to
the Journal office 126 Massachusetts Avenue

The Journal does not hold itself responsible for statements
made by any contributor

Communications should be addressed to The New England
Journal of Medicine 126 Massachusetts Avenue Boston Mass

A HOME FOR THE MASSACHUSETTS MEDICAL SOCIETY

At the last meeting of the Council of the Massachusetts Medical Society, a committee was appointed to consider Ways and Means of acquiring a permanent home for the Massachusetts Medical Society, and to solicit funds to acquire such a home if it deemed it advisable. The Committee was empowered to appoint sub-committees from the District Societies. This committee has voted that a permanent home in Boston for the Society is a most desirable thing and that sub-committees from the District Societies should be appointed to raise funds for such a purpose.

At present the offices used by the Society are inadequate and the rent paid for them amounts to a considerable sum. The activities of the Society especially of the JOURNAL, are increasing rapidly, and enlarged quarters are imperative. It seems to the committee that it is desirable for the Massachusetts Medical Society to own its own building in Boston. This build-

ing would house the offices of the JOURNAL and various officers of the Society. It would provide adequate room for Council and committee meetings and for medical gatherings of various sorts. It would provide definite headquarters for varied medical activities throughout the State and New England. It would serve as headquarters with some advantages of a club for members of the Society. Such a building could be made virtually if not actually self-supporting and thus benefit the Society. The Committee voted to launch a campaign to raise \$125,000.00. For this sum we can purchase a most desirable building, equip it and provide the nucleus of a sinking or endowment fund. It is the idea of the committee not to limit the amount of money to be raised. Any sum over and above the amount actually to be used for purchase and equipment of the home would be added to the endowment fund.

WAS IT AN ACT OF PIETY?

WHEN John Hunter came to his tragic end, Wednesday, October 16th, 1793, he left behind him an "enormous quantity" of manuscripts, as well as the museum specimens, which were taken care of by his boy, William Clift, aged eighteen. Clift had been with Hunter only a year, making drawings, dissecting and taking his part in the charge of the museum, for the next fifteen years he lived in poverty in the dreary Castle Street house, keeping things together and transcribing some of the precious manuscripts. In 1806 the collection was removed from Castle Street to the house of the new Royal College of Surgeons, Lincoln's Inn Fields, where by 1813 it was properly arranged. The manuscripts, in the meantime, were taken by Clift to the house of Sir Everard Home, the acting executor of Hunter's will. For twenty-three years, from 1800 to 1823 the manuscripts remained in the possession of Home and during this period, "he (Home) conveyed from them what he wanted into numerous papers that he read before the Royal Society, and into his 'Lectures on Comparative Anatomy', then, in July, 1823, having made thus use of Hunter's writings as material for his own advancement, he burned them" (Stephen Paget). Clift's side of the story was set out, in 1834, before the Parliamentary Committee on Medical Education (*Lancet*, July 11, 1835). According to Clift, Sir Everard Home burned the notes and nearly set fire to his own house in the bargain, the same week "that Sir Everard had received back from the printer the last proof of his second volume of 'Lectures on Comparative Anatomy' and I knew that he had used these papers very largely in the preparation of that work." Home, of course, defended himself. He said that Hunter, when he was dying, told him to destroy the manuscripts as they were in such a state that they were unfit for publication, but Hunter had

diaphragm ought to go down if we had a pneumothorax

DR DRESSER Perhaps the heart shadow has been displaced to the left, although there is so much rotation in the film that I cannot be sure of that. The position of the diaphragm is not abnormal.

DR YOUNG The reason I asked the difference between this and massive collapse is because we have been getting an extraordinary number of massive collapses of the lung following all kinds of operation. We had three to report in two weeks, one following a novocain operation, one following manipulation of a dislocated shoulder, and one following abdominal operation. We cannot figure why they are coming. But this is a very different picture. Dr Cabot, how far ought this condition to be important in the fatal result here?

DR CABOT I should think it was a sizable factor. I do not see why not.

DR YOUNG I cannot see at least why he should have gone out with the picture I saw just before this X-ray was taken, unless there was one of the atypical peritonitis cases that we have learned to know do come as we check up here in the necropsy room.

I do not know what the final diagnosis will be, but in view of the X-ray of the chest, the condition there, and what Dr Cabot says, I would like to assume that after four days of going along pretty well Dr Mallory will report the peritoneal cavity pretty clean.

DR CABOT Do you want to hazard a guess as to what gave him a pneumothorax?

DR YOUNG I have no guess at all. I do not know enough about the mechanism to venture one. Dr Mallory, can you help us out?

DR TRACY B MALLORY Not on that.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Appendix abscess

DR EDWARD L YOUNG'S DIAGNOSIS

Appendix abscess
Pneumothorax

ANATOMIC DIAGNOSES

Acute appendicitis
Perforation of the cecum
General peritonitis
Bronchopneumonia
Pneumothorax

DR MALLORY On opening the chest cavity a sudden rush of air was noted, presumably outward from the pleural cavity. Unfortunately it was not done under a water seal, so that we have no absolute proof of it.

The left lung was held in place by adhesions. The right lung was completely collapsed and showed a few minute nodular areas of consolidation.

The peritoneal cavity was full of pus, that is,

a great many areas of pus were found on the superior surface of the liver between the liver and the diaphragm, also in the pelvis, also a rather localized area in each flank. The appendix which the surgeons were unable to find at operation we were also unable to find. We found the mouth of it, which was occluded by a fecalith. The peritonitis however seemed not to arise from the appendix-stump, which was well walled off, but from a fresh perforation in the cecum near it. There were no other noteworthy findings.

DR CABOT There were no holes in the diaphragm?

DR MALLORY No, no etiology for the pneumothorax was found.

DR YOUNG Is it possible that that peritonitis, as you saw it, might have been a remnant of his original perforation sixteen days before?

DR MALLORY That seems a little bit long. I should have estimated it at about five days' to a week's duration.

DR YOUNG The second perforation which you speak of in the cecum is an unusual finding, and I cannot see how it could have been foreseen or avoided.

NEW YORK CITY MOSQUITO CAMPAIGN

New York City has appropriated \$83,000 for controlling the mosquito nuisance but the United States Public Health Service reports that \$100,000 more should be expended. This advice was based on a survey conducted by J. A. LePrinco, senior sanitary engineer.

A force of about fifty men are at work cleaning out ditches which were dug to drain stagnant pools.

Additional ditches will be dug and in April oil will be poured on all suspicious bodies of water and swamps.

ANOTHER VITAMIN

Dr Hubert M. Evans of the University of California claims to have discovered another vitamin which is the sixth and will be designated as F.

This vitamin Dr Evans believes is essential for normal animal growth.

This demonstration was made by feeding rats with pure food consisting of purified casein and recrystallized cane sugar with the necessary salts and five previously known vitamins. Under this diet the rats grew to only half the normal size. Lettuce and liver were found to be most potent in promoting normal growth.

Dr Evans was assisted in his investigations by Dr George O. Burr, chemist at the University of Minnesota.

DR SOKOLOSS TO ENGAGE IN RESEARCH WORK AT ROCKEFELLER INSTITUTE

Dr Boris Sokoloss, a former Deputy in the North Russian Government who has paid especial attention to cancer research in this country and will continue his work in the Rockefeller Institute.

In an interview Dr Sokoloss said that it is too early to speak of a cure for cancer but progress is being made.

prior to granting of consular visas, and treatment of detained aliens

6 The Civil Service Commission in physical examinations of applicants for employment, re-examination and for retirement

7 The United States Employees' Compensation Commission in advising with regard to medical problems connected with compensation and hospital and out-patient treatment of injured Federal employees in physical examinations and special investigations in the case of special claimants medical assistance in carrying out the Longshoremen's and Harbor Workers' Compensation Act

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

BIGELOW GEORGE H. A.B. M.D. Harvard 1916, Doctor of Public Health 1921 Commissioner of Public Health of Massachusetts. His subject is "Are Alcohol Deaths Due to Alcohol" Page 227 Address State House Boston

LYTHCOE HERMANN C. B.S. Director Food and Drug Division and Analyst of the Massachusetts Department of Public Health. Past President Association of Agricultural Chemists, Past Chairman Northeastern Section American Chemical Society. His subject is "The Character of The Illicit Liquor Upon the Massachusetts Market" Page 228 Address 530 State House, Boston

HUNT REID A.B., Ph.D. M.D. University of Maryland 1896, Professor of Pharmacology Harvard Medical School Consultant in Pharmacology Massachusetts Department of Public Health, Formerly Associate Professor Pharmacology Johns Hopkins Medical School Chief of Division of Pharmacology Hygienic Laboratory United States Public Health Service etc. His subject is "An Examination of the Toxicity of One Hundred Samples of Illicit Liquor" Page 230 Address Harvard Medical School Boston

CHEEVER AUSTIN W. A.B., M.D. Harvard Medical School 1914 Chief of Service Skin and Syphilis Department of the Boston Dispensary, Dermatologist at the Cambridge Hospital and the Brockton Hospital. His subject is "The Ideal Syphilis Clinic" Page 234 Address 472 Commonwealth Avenue, Boston

YORSHIS MORRIS M.D. Tufts Medical School 1925 Former House Officer Neurological Service at the Boston City Hospital Former Assistant in the Metabolism Clinic at the Boston City Hospital Out-Patient Department, Former Teaching Assistant at Tufts College Medical School in the Department of Neuropathology. Internate at the Worcester State Hospital. His subject is "A Case of Syringomyelia and Neurosyphilis" Page 236 Address Worcester State Hospital, Worcester

SMITHWICK M.P. A.B. M.D. Harvard Medical School 1895 His subject is "Control of Blood Supply in Tonsillectomy" Page 239 Address 483 Beacon Street Boston

EAVES, LUCILLE A.B. M.S., Ph.D. Professor of Social-Economic Research, Simmons College, Director of the Research Department Women's Educational and Industrial Union, Formerly Professor at the University of Nebraska Lecturer at the University of California Instructor at Stanford University Her subject is "Nursing Cancer Patients in Their Homes" Page 240 Address 264 Bowdoin Street Boston

THE STATUS OF THE PHYSICIAN AND THE HOSPITAL IN INDUSTRIAL ACCIDENT CASES

THE Workmen's Compensation Law has been in operation for fourteen years. Changes have been made since it was enacted. In 1927 a special commission reported upon their investigations regarding the operation of the Law (House 999 1927)

Two matters particularly are of interest to physicians—the payment of hospital charges and the payment for professional services in hospital cases

In the report of the Special Commission of 1927 (Page 10) is the following recommendation

Such hospitals as take and treat industrial accident cases—and they include most of the hospitals in the Commonwealth—insist that they should be paid the cost to them of their services. The Commission believes that this is the right principle. A hospital should not be forced to do charity in industrial cases and the full expense of the medical care of industrial cases should fall where the expenses of compensation fall so that both together may be included in the insurance required by the Act

The Commission points out however the difficulties and inadvisability of allowing each hospital to charge its own actual cost

Further in the report (Page 12) is the following

The Commission has been asked to define the right of hospital physicians who care for industrial accidents in their hospitals to fees. These physicians serve their various hospitals under regulations made by the board of trustees etc. of each hospital and the Commission considers that it is to these boards etc. rather than to the Industrial Accident Board or to this Commission that aggrieved members of the various hospital staffs should appeal. No recommendation therefore is made on this subject

At the present time a large majority of charitable hospitals except teaching hospitals and some in the larger cities classify as private or semi-private patients those now protected by insurance

so prized them that three of the folios were put at his side when Reynolds painted him. Although he (Home) said he had destroyed every one of the manuscripts, when the trustees brought pressure to bear, he returned several (Paget) Home was sixty-seven at the time, he had been President of the Royal College of Surgeons, twice Hunterian Orator, Surgeon to the King, a Baronet, and was Miss Hunter's brother. How could a man of his standing commit such an infamous act of vandalism? Paget thinks "he got weary of the sight of the manuscripts, and persuaded himself that they might be burned, now that Hunter had been dead for thirty years. Unhappily for his good name he had made use of them in his own writings." Sir Benjamin Brodie (Hunterian Oration, 1837) thought that, "as he grew old, he became I believe, the subject of one of those forms of senile degeneration in morality against which all men growing old need to guard. He stole from the Hunterian manuscripts, and then burnt them, after publishing many of Hunter's observations as his own." Home died in 1832, Clift in 1849 and there the matter has stood since Clift's testimony in 1834. No one has offered any other explanation for Home's extraordinary conduct, he stole the material and nearly succeeded in destroying the evidence.

One hundred and five years after Sir Everard threw the precious folios into the fire, the best Hunterian scholar of our day, Sir Arthur Keith, Curator of the Hunterian Museum, London, comes forward with a new explanation of Home's act. He writes at the end of a most delightful sketch on "The Bicentenary of John Hunter" (*Nature*, February 11, 1926) "There would have been no record left if Sir Everard Home had had his way. That any record was preserved at all of Hunter's real thoughts is due to William Clift. Home burned Hunter's original manuscripts, the usual explanation being that he had pilfered from them. A close study of the conventional character of Sir Everard Home and of the circumstances which surround this infamous act of vandalism have convinced me that the accepted explanation is not the true one. Home shared implicitly in the religious beliefs of his time and never doubted that by destroying all evidence of Hunter's heretical convictions he was performing an act of piety on behalf of the world in general and for the memory of his brother in law in particular." Sir Arthur Keith expresses the opinion, also, that "Hunter's inquiries had made him a pagan, he could not harmonize what he found in the realms of Nature with what his inquiries revealed to his own eyes. He silently and resolutely thought and wrote as if the book of Genesis had never been in existence." Even Sir Richard Owen, Clift's son in law, felt that he ought to apologize for Hunter's heretical beliefs and perhaps Keith is right in thinking that Home by burning the manuscripts felt that he was performing "an act of piety."

VARIED FUNCTIONS OF THE UNITED STATES PUBLIC HEALTH SERVICE

A RECENT report submitted to Congress by Surgeon General Cummins shows the practical way in which cooperation is effected between the Public Health Service and other governmental bureaus and departments and with unofficial agencies.

Such cooperation, all of which is designed to advance the public health has been the long standing policy of the Public Health Service as the health agency of the nation. Some of this work, according to the report, is specifically required by law, the remainder is sanctioned by efficiency of administration. Thus the highly specialized professional personnel of the Public Health Service is segregated into a compact unit for administrative purposes, and is so organized that it can be drawn on for expert help whenever it is needed in any other branch of the Government. The building up of new professional units in the various departments at great overhead expense and with inevitable duplication of work and lack of coordination is thus obviated.

Among the important ways in which this cooperation is affected may be listed the following:

- 1 The Department of State. Medical examination of aliens prior to the granting of visas, medical treatment of destitute seamen returned from abroad, a lunistration of foreign quarantine regulations.

- 2 Other branches of the Treasury Department in furnishing medical and sanitary advice to the United States Coast Guard, in issuing permits to ships for medicinal liquor and narcotics, in the studies of the lighting of rooms in buildings of the Treasury Department, Coast Guard and Bureau of Mines, in aiding the Customs Division in preventing violations of the quarantine act because of failure of masters of vessels to secure consular bills of health, and in issuing port sanitary statements to outgoing vessels.

- 3 The Department of Commerce in physical examinations and instruction in first aid of applicants for licenses as ships' officers, at the request of the Steamboat Inspection Service, in the treatment of persons attached to vessels and stations of the Lighthouse Service, vessels of the Coast and Geodetic Survey, furnishing medical supplies to lighthouse vessels, in studies of occupational health hazards among certain employees of the Bureau of Standards, inspection of Government office buildings in the District of Columbia, in studies of problems of sanitation in the mining industry in connection with the Bureau of Mines.

- 4 The Interior Department in administration of medical and sanitary service to the Indian Bureau and assistance in the sanitary supervision of the National parks.

- 5 The Department of Labor in the medical examination of arriving aliens and quota aliens.

tion maintained in part by contributions of a public character, and is not expected to be and is not entirely self-supporting. We feel that no discrimination should be made either for or against the insurer, who may also be considered a member of the public in the matter of the charge made. In the last analysis it is fair to assume that if a larger amount were to be charged to the insurers this would be speedily reflected in the premium charged and the expense would again come back to where it now rests to wit, upon the public. It has seemed, therefore, right and proper to this Board to cleave to the rule laid down of no discrimination.

As regards the payment of physicians for professional services rendered as a member of the Staff to patients in a hospital the following recent unanimous decision of the Board is important and is printed in full

James Allan, Employee
Arthur C Harvey Co, Employer
Travelers Ins Co, Insurer
Martin H Spellman, M D, Physician

DECISION OF THE BOARD

This case, as noted in the record, comes before the Board at the request of a physician under the provisions of Section 13 for the purpose of having determined what amount if any should be paid to the doctor under the provisions of section 30 of the Act. Section 30 of the Act reads in part as follows — "During the first two weeks after the injury is received, the insurer shall furnish adequate and reasonable medical and hospital services." Further on in this same section, a provision is made whereby the employee may choose his own physician —

An examination of this record discloses that in this instance the employee did not choose a physician and the Board so finds. The facts upon which this finding is made are clear upon the record. The employee did go to a Dr Larabee who bandaged his hand and advised him that his was a hospital case. He then went to the St Elizabeth's Hospital in accordance with this advice. That he made a choice of a hospital seems quite apparent, but he knew no doctor in the hospital and he so stated to the nurse when asked if he had a doctor. She then suggested the name of Dr Spellman and he said that Dr Spellman would be all right. Whether there was any other doctor in the hospital at the time does not appear. Such a procedure does not, in the opinion of the Board, constitute the choosing of one's own physician contemplated by the statute and hence the finding made above on this point.

Dr Spellman, who was called, was at the time chief of the accident service at the hospital and had been such for about seven months. As such he was a member of the hospital staff and he testified that as staff doctor "he gives his time

gratis to the poor. He receives no salary from St Elizabeth's Hospital." He rendered a bill in this case for \$45. While the bill was made out in the name of the employee, the bill apparently was sent to the insurer and the present proceeding is brought by the doctor to collect from the insurer. At this point it may be proper to state that the Board finds that so far as the professional services of the petitioner are concerned they were adequate and that if no other factor entered into the case except the value of those services, as such, the charge made by him is reasonable.

The real question raised upon this record and the question which the parties themselves desire to have passed upon by this Board is whether or not the insurance companies should be charged with the payment for services rendered by staff doctors in hospital cases coming in to the hospital in the ordinary course. It is not intended in considering this case to pass upon another class of cases where an injured employee comes to a hospital as the private patient of a doctor sent there and treated there by the doctor because of the facilities and opportunities for proper treatment which the hospital presents.

The question raised in this case first came before the Industrial Accident Board some years ago. But before that and when other questions than the present were being met with, the Industrial Accident Board had asked the assistance of the medical profession through accredited representatives of various medical societies to appoint a committee to confer with and advise the Industrial Accident Board as to what in the opinion of that profession expressed by these representatives would be a proper position for the Industrial Accident Board to take upon certain questions which had already and thereafter might arise. When the question now presented before us in this record first presented itself, the Industrial Accident Board called into consultation this Medical Advisory Committee so-called. Our Board recognized at that time, and still recognizes, that it was not for it to delegate any authority which they had or any duty which was placed upon it to such a committee. However in the words of the statute, the insurer is to be charged with the furnishing of adequate and reasonable medical and hospital services with limitations set forth in the statute and upon this side of the case the guidance and statements of this Medical Advisory Committee seem to the Board to be pertinent and entitled to weight in reaching a conclusion as to what constitutes a fair charge to be made against the insurer for reasonable hospital services. The advice of that Committee to the Industrial Accident Board was that the insurer should not be charged with the payment for medical services rendered by a member of a hospital staff on duty as such. The Board con-

The Medical Advisory Board in a report published in the *Boston Medical and Surgical Journal*, June 2, 1921, stated with reference to Hospital Fees—

"There has been much feeling against the ruling that establishes a fixed weekly fee for hospitals that is sometimes below actual cost. The occasional hardship of this is conceded.

Unfortunately some uniformity in rulings is necessary

Moreover, it is a fact that all public hospitals, and this includes most of our hospitals and those most often heard, are community hospitals of a more or less public type, and if chartered as charitable corporations, free from taxes and certain legal disabilities in view of their supposed public services. This is true even if they are supported more by private than by public funds.

Therefore it is felt that the hardship of calling for treatment of the insured employee at the same rate as that charged his neighbor citizen involves less injustice than would result under other plans proposed."

and with reference to Fees to Hospital Physicians—

"There has been bitter feeling, often expressed because of the ruling that, in effect, often forces staff hospital physicians to treat insured cases for nothing. This ruling, carefully considered, often discussed, before and since, is not the result of any bias against hospital physicians or in favor of insurance companies.

Here, too, the fact that public hospitals are exempted from various liabilities in view of public service rendered and that the doctor is in some measure compensated for his work by the experience and reputation gained is not without some pertinence.

It seems unwise to treat Mr. X, injured in his own yard, and Mr. V, coming under compensation,—both lying in a given hospital ward,—on other than an equal basis. Mr. X pays his own bills. Mr. V's are paid by someone else—in this case the insurer—but the service of a community hospital to two citizens of like standing is the same.

The opinion of the American Hospital Association is expressed in their *Transactions* Vol 28, P 417, as follows:

"Resolved, that under present conditions the burden of proper treatment of compensation cases is oppressive, unjust and contrary to all economic principles and that therefore this association make every endeavor to require that hospitals and physicians shall receive recompense in every Workmen's Compensation Case sufficient to pay the cost thereof and that our trustees be requested to take such action as they may deem expedient in the effort to terminate the present intolerable conditions as quickly as possible in order that hospitals may be better enabled to properly carry on their work for the economic and social benefit of the communities which they serve.

The law as amended reads thus (General Laws Chapter 152, Section 30)

"During the first two weeks after the injury, and if the employee is not immediately incapacitated thereby from earning full wages, then, from the time of such incapacity, and in unusual cases, or cases requiring specialized or surgical treatment, in the discretion of the department, for a longer period the insurer shall furnish adequate and reasonable medical and hospital services, and medicines if needed together with the expenses necessarily incidental to such services. The employee may select a physician other than the one provided by the insurer, and in case he shall be treated by a physician of his own selection, or where, in case of emergency, or for other justifiable cause, a physician other than the one provided by the insurer is called in to treat the injured employee, the reasonable cost of his services shall be paid by the insurer, subject to the approval of the department. Such approval shall be granted only if the department finds that the employee was so treated by such physician or that there was such emergency or justifiable cause, and in all cases that the services were adequate and reasonable and the charges reasonable. In any case where the department is of opinion that the fitting of the employee with an artificial eye or limb, or other mechanical appliance will promote his restoration to industry, it may order that he be provided with such an artificial eye, limb or appliance, at the expense of the insurer."

(The portions in italics are amendments.)

The interpretation of the Law is the work of the Industrial Accident Board and on appeal of the Courts. Of course primarily the law is intended for the benefit of the injured workman.

The general policy of the Board in reference to the payment of Hospitals is indicated by the following finding quoted in their report for 1917-18, Page 54:

"The question raised in the present case and the issues presented thereby have been passed upon on several occasions by this Board. The general finding which has been made by this Board in cases involving the proper and reasonable fee for insurers to pay for hospital treatment of injured employees who are under the act has been that the insurer should pay the general ward rate charged to general patients treated in the hospital who are able to and do pay hospital charges. The Board is not prepared to dispute the proposition advanced by the witness for the hospital in the present case, that the actual cost of taking care of a patient may be greater than this charge and this statement has been made in other cases but the Board has felt and still feels that the injured employee who goes to the hospital goes there as a member of the public, and that the bill which should be paid for his treatment is and should be the bill which would be charged him as a member of the public.

The present hospital, as in other cases where this ruling has been made is a public charitable institution.

the hospital in all its ramifications may be more than the amount received from patients therein.⁹ One might go further even in the analogy and point out that it is a more or less general belief that those who furnish instruction in our schools of higher education do not receive salaries commensurate with the value of their actual contributions to the cause.

And so the Board, affirming the position which it has heretofore taken in cases of this character and reiterating it in the present case finds and rules that the insurer having paid the ordinary hospital rate has fulfilled the obligation placed upon it by the statute to furnish adequate and reasonable hospital services to the employee and that the claim of the physician that he be paid by the insurer for his services should be and is denied.

FRANK H. DONAHUE.
CHAS. M. STILLER.
DAVID T. DICKINSON.
WM. W. KENNARD.
JOSEPH A. PARKS.
CHESTER E. GLEASON.
EMMA S. TOUSANT.

It is understood that an appeal is to be made to the Courts in this case.

The attempt has been made to outline the situation as it exists today. A Committee representing certain districts of the State is at work gathering facts regarding the compensation of physicians for their work for hospital patients who are insured. In this statement the JOURNAL has tried to avoid comment or criticism. Doubtless comment will be made by others and by the JOURNAL in later issues.

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY
Foster S. Kellogg, M.D. Frederick L. Good, M.D.
Chairman Secretary
Frederick J. Lynch, M.D. Clerk

What is the accepted modern treatment of hyperemesis gravidarum?

There is a large psychic element as a cause for vomiting in the majority of these cases. Treatment which produces a profound mental impression on the patient will be most efficacious. The routine described below is designed to produce that mental impression in addition to providing treatment for the acidosis and dehydration which are almost invariably present. This routine may seem harsh but any attempt to soften it will render it less effective or cause it to fail altogether.

Send the patient to a hospital. Strict adherence to this routine is almost impossible in the home and modifications of it, adapted for care

in the home, or partial adherence to the routine must be avoided.

Place the patient in strict isolation in a single room. Exclude all visitors until the patient is taking food and fluids well and has been free from vomiting for at least 48 hours.

Warn nurses and attendants against any expressions of sympathy or conversing any more than is absolutely necessary with the patient.

Forbid the patient to have an emesis basin in the room. The presence of such a utensil reminds the patient that she is expected to vomit and invites her to continue. If she does vomit let her vomit on the floor. This is repugnant to her and the knowledge that she must vomit on the floor or not vomit at all has a strong inhibitory effect on her.

Administer 8 ounces of fluid by rectal taps every 4 hours alternating normal saline and 5% glucose. Add 30 grams of sodium chloride to each 8 ounces of 5% glucose. The reason for using normal saline instead of tap water and for adding salt to the glucose solution is that, due to the constant removal of hydrochloric acid from the stomach by repeated vomiting the blood chlorides are always lower than normal. Restoration of the blood chlorides to normal, with consequent improvement of hydrochloric acid secretion in the stomach, tends to reduce the nausea and vomiting.

Starting at 7 A. M. and continuing until 9 P. M. have the patient drink 8 ounces of fluid every hour. At 7 A. M., give 8 ounces of milk, at 8 A. M., 8 ounces of malted milk, at 9 A. M., 8 ounces of water, at 10 A. M., 8 ounces of milk again and so on in rotation in this order until 9 P. M., and then give nothing by mouth until 7 A. M. when the same routine is repeated. The nurse should hand the glass of liquid to the patient and insist that she drink it at once. Do not leave it with the patient to drink or not as she chooses. Many patients will say that they can't drink milk, that it always nauseates them and will suggest ginger ale, bouillon, tea, coffee or some other liquid as a substitute. The answer to that should be, "This is a treatment which never fails. You must follow it absolutely. You may vomit the milk as soon as you have swallowed it but you must drink it now." If she does vomit don't be discouraged. Repeat the same procedure every hour and the patient will rarely vomit more than two or three times.

After the patient has taken the hourly glass of fluid without vomiting for 24 hours she will usually ask for solid food. Don't grant that request immediately. Make her continue the milk, malted milk and water routine for another 24 hours and assure her that if she has no vomiting during that time she may have food. Don't let her stop the routine until she is thoroughly tired of it.

Bromides should be given in 30 grain doses

sidered this advice and they proceeded to adopt it in all cases coming before them in which the issue presented itself in the way stated and many cases have been decided by this Board in accordance therewith. In reaching this conclusion the Board took into consideration the nature and character of hospitals. They are public institutions. They are, or at least those to which we have intended to apply the rule stated, organized under Chapter 180 of the General Laws and as such enjoy privileges in the Community, including exemption from taxation, freedom from suit, etc., which no private concern has. So far as this Board knows none of the hospitals so organized and so conducted are self-supporting. They depend to a very considerable extent upon contributions from the public and in many instances from the local government in the locality where they exist. It is perfectly well known that doctors as a class seek positions upon the staff of their local hospital. These positions they seek with the expectation and understanding that they are to receive no direct monetary return for their services. Their return for their voluntary services is figured not in terms of dollars and cents but in experience gained, prestige perhaps obtained, and last and by no means least the satisfying sense of having done something for the Community in which they live. In some hospitals at least staff men enjoy a privilege denied to other physicians in the Community in that they are permitted to take into the hospital private patients for treatment, whereas any other doctor in the Community, not upon the staff, who desires hospital treatment for a patient, is obliged to relinquish his care of the patient, send the patient to the hospital, there to come under the care and treatment of a staff man of the hospital. In some instances only members of the staff can have private patients in the hospital.

The Board sees in sanctioning the charging of patients in the hospital by staff physicians the seed of much discontent and possibly trouble throughout the Commonwealth in hospital administration and results. We have on the one hand a hospital staff, in many instances of a self-perpetuating character, but in any event looking to the trustees or members of the existing staff for appointment. At the same time we find the trustees seeking the aid of the public at large, for a hospital, which so far as the appeal to the public is concerned is to take care of patients coming into the hospital in the way and manner in which the injured workman in this case came to St. Elizabeth's Hospital. Nor is the Board unmindful of the fact that the make-up of hospital staffs is not always satisfactory to all the members of the medical profession in a given locality. If they are to be permitted to charge ward patients for their services this feeling of dissatisfaction will certainly not be lessened, and so public feeling points to the course we are following.

The staff men who ask to be permitted to charge the insurance companies for their services make the assumption that they are furnishing something to the insurance company and that the insurance company is profiting thereby. In the last analysis this statement is a fallacy because the insurance company, if the policy is adopted of permitting charges, will charge the policy holders, and the public will once more find itself in the position of the ultimate consumer and the bearer of the financial cost.

It should not be lost sight of that the insurer has paid the hospital bill of \$63 in this case. Ordinarily if this employee had gone to a hospital as a result of the same condition due to an injury received outside of his employment, he would not be asked to pay for the services he received from the surgeon or physician who attended him as a member of the staff.

The Board, in addition to all other reasons stated above, is further influenced by the belief that in charging the insurance companies for services in a case of this sort, as in other cases, they should be actuated and guided in part at least by a consideration of what the injured man might naturally expect to have for medical services as a private individual based upon his own resources and station in life. Hospitals in the first instance are maintained and supported by the public for the care and treatment of the members of the public needing hospital care and they are ordinarily constructed with the ward patient in mind as the first consideration. Certainly the care which a patient receives in the general ward of the hospital must be reasonable and adequate treatment in the average case. Were the members of any hospital staff to hold to the contrary it would amount to an indictment of themselves and their hospital, which it is inconceivable that they would subscribe to. Certainly, the Industrial Accident Board finds no reason for bringing such an indictment against our Massachusetts hospitals.

Many of the hospital doctors have a very unfortunate way of terming those patients who are treated in the general ward as "charity patients." Such designation is uncalled for and unwarranted. These very doctors themselves have obtained their education in most instances at institutions of learning where they have paid for tuition a sum entirely incommensurate with the actual expense which has been involved in giving them their education. Figures published in the press within a few days have shown that at one New England College the receipts from tuition fees represent but thirty per cent of the cost of the administration of the college. Needless to say, the doctors who went to that college and paid the tuition charged do not feel that they were "charity students." And, if not, is there any reason for designating the patient who goes to a hospital and pays the established hospital charge for ward treatment a charity patient simply because the cost of administering

has been sought by the Larische and Roval Sympathectomies, the use of citrate solution intravenously and through the duodenal tube and alcohol injections into arterial sheaths, etc. A fairly complete Bibliography of this disease with abstracts of articles will be on exhibition in Holmes Hall the week of March 19th.

JAMES THACHER, M.D.

1754-1844

The Library has recently been given two books that are of more than ordinary interest. Dr. James Thacher, a physician practicing for more than sixty years in Plymouth Mass. was the author of them. They have been for many years in possession of different individuals but finally have been deposited here by one of Dr. Thacher's descendants, Dr. James W. Sever who realized their value as historic evidence of the state of Medical Science in this locality during that period. One of them is a compilation of "American Modern Practice" and the other is entitled "American Medical Biography."

In 1891 the annual discourse before the Massachusetts Medical Society delivered by Dr. J. B. Brewster had for its subject the life of Dr. James Thacher. He was born in Barnstable on Cape Cod and when he came to study medicine at sixteen he was apprenticed for five years to Dr. Abner Hersey of his native town. When he had completed this apprenticeship he was twenty-one and the country was just entering upon the Revolutionary War, the Battle ofunker Hill having but recently been fought. He joined a regiment and remained in the army until 1783. The same year he started practicing in Plymouth and from the very start he taught medicine, having six and eight students apprenticed to him. He came under suspicion for a "Resurrectionist" for a time but his practice became very large and he held the respect of people far and wide, finding time, however to write a great deal, his last work appearing when he was eighty-one. He died at ninety. A full account of his life may be found in the Proceedings of the Massachusetts Medical Society for 1891. In the volume on Medical Biography there is much interesting material regarding the state of Medical Education in America—a brief account of all the existing Medical Schools, the personnel of their faculties and the number of their students. The first leaf contains an interesting copyright notice, defining the purposes of the copyright act and the opposite page contains a dedicatory note to Dr. Holmke, the first president of the Massachusetts Medical Society—a man then (1825) in advanced years.

That one should have been able to carry on a large practice and find time to contribute so much by his pen, and this at a time when books were scarce and not collected to any great extent in libraries, is all the more remarkable.

MISCELLANY

THE COMMONWEALTH FUND

ITS ACTIVITIES

The Board of Directors of the Commonwealth Fund at their February meeting appropriated \$358,438 for the Fund's rural hospital program. During the last two years five awards have been made under this program for hospitals in Farmville, Va., Glasgow Ky., Farmington, Me., Beloit, Kans. and Wauseon Ohio. In each case the Commonwealth Fund provides two-thirds of the cost of construction and equipment while the community pays the remainder of the cost and assumes the expense of operation.

At the same meeting \$27,000 was appropriated for fellowships in psychiatry at the University of Colorado Medical School. Six such fellowships, each with a stipend of \$2,500 for two years study will be offered to graduates of class A medical schools who intend to specialize in psychiatry. The University of Colorado, in affiliation with the Colorado Psychopathic Hospital, which was opened three years ago under the direction of Dr. Franklin Ebaugh, is regarded as offering unique opportunities for the training of psychiatrists in that part of the country.

Five three-year fellowships for psychiatrists at the Henry Phipps Psychiatric Clinic under the direction of Dr. Adolph Merer, Johns-Hopkins University, Baltimore, were also provided for with a grant of \$45,000.

A grant of \$4,750 for operating expenses was made to the New York City Committee on Mental Hygiene with a possibility of renewal for two subsequent years. This Committee was organized in May 1927 as one of the local branches of the New York State Committee on Mental Hygiene affiliated with the State Charities Aid Association. Dr. C. Floyd Harland, Superintendent of the Manhattan State Hospital, is chairman of the Committee and Mrs. Srdine C. Borg of the Jewish Board of Guardians is vice-chairman. The Committee will function as the mental hygiene section in the health division of the Welfare Council of New York City and it expects to develop a unified mental hygiene program for New York City.

Other appropriations made at the February meeting included \$10,000 to the National Probation Association for the further development of its field service department, \$15,000 to the Foreign Language Information Service, \$3,500 for the cardiac clinic of the Johns-Hopkins University Hospital and \$2,000 for scholarships at the Southern Pediatric Seminar. The latter grant repeats one of the same amount made for the summer of 1927 under which 35 scholarships were awarded to physicians from six southern States to attend this Seminar which is held for two weeks each summer in Saluda, N. C. in order to enable general practitioners to gain further clinical information concerning methods of diagnosis, treatment and prevention of children's diseases.

At the preceding meeting of the Board of Directors of the Commonwealth Fund, held in December the following appropriations were made for the child health program of the Commonwealth Fund, \$230,000 for projects in legal research to be conducted by the law schools of Chicago, Yale and Har-

by rectum every 8 hours preferably being given with the rectal tap of 8 ounces of normal saline

If, after the preceding routine has been established, the patient does not promptly stop vomiting she should have a stomach lavage done once or twice. This procedure has no value aside from its psychic effect but it is an uncomfortable experience which the patient dreads to have repeated and the psychic effect is considerable.

If the patient is at all dehydrated give 1000 cc of normal saline by hypodermoclysis. On all except the early and mild cases it is best to give one such treatment as soon as the patient is admitted to the hospital and it may be repeated every eight hours until the patient is obviously no longer suffering from lack of fluid. If the patient retains her rectal taps the glucose in them will usually suffice to control acidosis but if much acetone and diacetic acid are present in the urine 500 to 700 cc of 5% glucose may be given intravenously. If intravenous glucose is given the solution should be made from the highest purity glucose and sterilized in the autoclave. Ampules of a 50% glucose solution are now obtainable and this solution diluted with nine volumes of sterile water or normal saline offers probably the simplest and safest method of preferring a 5% glucose solution.

If after a fair trial, the patient fails to improve, or if, under treatment, she shows a steadily rising pulse, then the pregnancy should be terminated while the patient is still in condition to withstand the shock of operation. The necessity for this seldom arises if treatment is begun before severe acidosis and dehydration have developed. The preceding routine if carried out with rigid attention to detail will almost always control the vomiting.

By its use patients have been restored to normal who obviously were so sick when admitted to the hospital that any attempt to terminate the pregnancy would probably have proved fatal. In that type of case the first care should be the correction of acidosis and dehydration by intravenous glucose and large amounts of saline by hypodermoclysis and by rectum. The earlier the treatment is begun the better are the chances of success.

Questions of a similar nature to the above will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

BOSTON MEDICAL LIBRARY

THROMBOANGIITIS OBLITERANS

(Buerger's Disease) (Yiddische Krankheit)

Brief abstracts of the Chief articles that have appeared on this subject in the past twenty years accompany the text and will be on exhibition in Holmes Hall for the week of March 19th.

Charcot and Savory contend for priority of description, both in 1856. In 1869 Billroth recorded the first amputation and gave the specimen to Winniwarter who described the lesions under the name of endarteritis obliterans but not until 1879. Jasche in 1865, Burrow in 1867, and Friedlander in 1876 reported clinical cases, the latter especially describing the pathology. In fact it was called Friedlander's disease by Osler. Wiener and Sachs, 1889, had opportunity to study a case and investigate its pathology after amputation but classed it as Erythromelalgia, described not long before by Wier Mitchell (1872). In 1904 comes Erb's thorough study of the disease with emphasis laid upon the racial distribution and the probable rôle of nicotine in its causation. In 1908 Buerger reported pathological and clinical studies on 11 cases and coined the name now most commonly used. Since that date the literature has been getting well stacked with references, mostly clinical reports.

The importance of the matter is that the patient's distress (physical and economic) and the surgeon's discouragement over the management of cases so often lead to the adoption of methods unnecessarily radical and mutilating.

The causative factors seem to be a highly sensitized nervous system in the male, and the early, prolonged, and perhaps excessive use of cigarettes. That is not a racial disease exclusively, is becoming quite evident as nationals of all countries seem to have it, though the male Jew suffers most conspicuously. The most striking thing about the clinical course of the lesion is that two methods of control of the progress are adopted by Nature. VIZ canalization of the clot in the obstructed vessels and extensive proliferation of vessels, or dilatation of such collaterals as already exist, both of which processes tend to care for the nutrition and overcome the tendencies toward gangrene. Treatment, in recognition of these two tendencies, should be directed to forcing the increase of collateral circulation and supporting the patient's morale by helping him to bear his pain.

Recent experiments with foreign protein (typhoid vaccine) seem to provide relief from pain for intervals of several days and no harm appears to come from repeated intravenous medication with it. It is to be hoped that in this is to be found a means of holding these sufferers while the reparative processes above described are being carried out. This is what

COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT
WITH 1927 AND SEVEN YEAR AVERAGE
MONTH ENDING MARCH 3

1928

1927

	Wk ending Feb. 11	Wk ending Feb. 18	Wk ending Feb. 25	Wk. ending Mar. 3	Average cases reported for week corresponding to Mar. 3 for past seven years.	Wk ending Feb. 12	Wk ending Feb. 19	Wk ending Feb. 26	Wk. ending Mar. 5
Actinomycosis	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-
Botulism	-	-	-	-	-	-	-	-	-
Cerebrospinal Men	1	-	2	1	1	2	2	-	1
Chickenpox	123	75	72	97	72	103	88	107	107
Conjunctivitis Inf	-	-	-	-	-	1	-	-	-
Diphtheria	43	29	26	20	56	31	41	27	29
Dysentery, Amoebic	-	-	-	-	-	-	-	-	-
Dysentery, Bacillary	-	-	-	-	-	-	-	-	-
Encephalitis, Epid	-	2	1	1	3	4	-	-	-
Favus	2	-	-	-	-	-	-	-	-
German measles	4	1	-	1	16	5	58	3	7
Hookworm Infection	-	-	-	-	-	-	-	-	-
Influenza	3	10	3	3	156	5	14	18	7
Leprosy	-	-	-	-	-	-	-	-	-
Malaria	-	-	-	-	-	-	1	-	1
Measles	280	318	358	358	324	121	89	138	146
Mumps	114	102	172	209	68	30	31	36	55
Paratyphoid Fever	-	2	1	-	-	-	-	-	-
Pneumonia (Broncho)	29	30	35	50	40*	39	41	33	34
Pneumonia (Lobar)	50	74	60	60	62	34	41	41	53
Poliomyelitis	-	-	-	1	-	-	-	-	-
Scarlet Fever	114	86	89	74	122	101	118	107	96
Septic Sore Throat	1	2	2	-	1	3	6	1	2
Smallpox	6	1	2	3	6	-	-	-	-
Tetanus	-	-	-	-	-	-	-	-	-
Trachoma	-	-	-	-	-	-	-	1	-
Trichinosis	-	-	-	-	-	-	-	-	-
Tuberculosis (Pul.)	47	26	45	33	31	22	44	24	29
Tuberculosis (o f)	1	2	15	4	3	9	5	6	3
Typhoid Fever	2	1	4	-	2	-	3	-	1
Typhus Fever	-	-	-	-	-	-	-	-	-
Whooping Cough	190	96	175	133	59	54	49	36	52
Gonorrhoea	25	28	32	28	30	45	17	14	21
Syphilis	33	29	51	50	47	32	15	25	27

*Average for three years Made reportable January 1, 1925 Remarks No cases
of cholera, Asiatic, glanders, plague, rabies in humans and yellow fever during the
past seven years.

versities \$25 000 for surveys of rural work under the direction of the Committee on Practice of the American Public Association, \$22 500 to the National Congress of Catholic Charities for a study of child homes, \$16 500 for a two year study of encephalitis cases at the Pennsylvania Hospital, \$10 000 for the general budget and the department of institutional care of the Child Welfare League of America, \$10 000 for the cardiac work of the New York Tuberculosis and Health Association, \$7,500

A REPORT OF THE WORK AND APPROPRIATIONS

The expenditure of \$1 100,000 last year by the Commonwealth Fund in efforts to improve the physical and mental health of American children is described in the ninth annual report of the General Director Barry C Smith published February 6 1928. Other gifts for hospitals educational and welfare work brought the total appropriations for the fiscal year ending September 30, 1927 to \$1 953,557.

The capital endowment of the Commonwealth Fund, which was established in 1918 as a general philanthropic foundation with an initial gift of \$10, 000 000 from the late Mrs Stephen V Harkness was increased by additional donations during her lifetime and now amounts to over \$38 000 000. The income last year was \$2,129 743.

Approximately \$417 000 was expended to carry on the Fund's program for the promotion of child health. A five year demonstration of health work in Fargo N D, was completed and the city has made provision for the continuance of every essential activity at its own expense. Fargo's health budget for 1928 calls for an expenditure of \$1.13 per capita for health purposes as compared with \$28 in the year prior to the opening of the demonstration. The health work of the city is rated by the American Public Health Association at 814 points out of a possible 1000 as compared with 320 the year before the demonstration. Similar demonstrations are being continued in Rutherford County, Tenn Athens (Clarke County) Ga., Marion County Ore., and the official scoring of public health activities in these communities already shows gains comparable to that in Fargo.

In Austria where the Fund has aided in the support of various forms of child welfare and health work throughout the postwar period no attempt has been made to import American public health methods, but standards of existing Austrian child health service have been raised and various extensions of the public health program have been made in accordance with the demands and understanding of each community. In the belief that the best way to improve standards is through the training of workers in strategic points throughout the country scholarships totaling \$39 000 have been given to physicians midwives and welfare workers. During the past summer Dr Thomas Scherrer, Chief of the Austrian Department of Public Health, visited the United States under the auspices of the Fund traveling as far as the Pacific coast in a two-months study of American public health work.

The Fund's program for the development of child guidance clinics visiting teacher work in the public schools and allied projects in the field of mental hygiene required last year appropriations totaling \$697 000. A five-year period of demonstrations and consultant service under this program ending in June 1927 has resulted in the establishment of community clinics for the study and treatment of children's behavior problems in Cleveland Philadelphia, St. Louis St. Paul Minneapolis Dallas, Baltimore Richmond Milwaukee Los Angeles and Pasadena California. Following a series of three-year demon-

strations together with advisory and consultant service visiting teacher work has been organized in the public school systems of fifty-eight communities located in thirty two different States. School children to the number of 15 439 have been aided by visiting teachers in the solution of their difficulties in these demonstration centers and in New York City.

An outstanding feature of the Fund's mental hygiene program was the establishment this year of an Institute for Child Guidance in New York City under the direction of Dr Lawson G Lowrey. This Institute is fully equipped both for research and for practical work with children who exhibit conduct disorders and personality difficulties. It also provides a center for the special training of psychiatrists, psychologists, and psychiatric social workers. Fellowships established by the Commonwealth Fund for students at the Institute are administered by the National Committee for Mental Hygiene the New York School of Social Work and the Smith College School for Social Work.

Through its Division of Education the Fund expended \$50,000 for educational research. In June, Max Farrand, who had been director of the division for several years resigned to accept the position of director of research of the Henry E Huntington Library and Art Gallery. Under his successor, Edward Bliss Reed formerly associate professor of English at Yale the Division is devoting its major attention to administering the fellowships for British graduate students in American universities which the Commonwealth Fund established in 1925. A total of \$175 000 was appropriated last year for the maintenance of these fellowships which permit of two years study and travel in the United States. The first group of Fellows appointed in 1925, have completed their studies and returned to positions in Great Britain or the Dominions. To the original twenty fellowships the Fund added last year three fellowships for graduate students from the Dominions studying at British universities, and more recently two fellowships for university graduates attached to the British Colonial Service.

For the development of rural hospitals the Commonwealth Fund appropriated \$414 000 during the year under review, making awards to Farmington, Maine Beloit Kansas and Wauseon, Ohio Farmville Virginia and Glasgow Kentucky had received awards the previous year under this program, the objects of which are to provide modern hospital facilities in rural areas where they are needed to assist in improving standards of local medical practice, and to provide an incentive for good physicians to remain in the country and for young physicians to come there. In accordance with a policy of cooperation which is applied so far as possible in all the Fund's local work it is stipulated that the community shall pay a third of the cost of building and equipping the hospital and undertake its maintenance. The general plan includes the construction of fifty bed general hospitals in the selected areas the development where advisable of facilities for the training of nurses provision for preventive and educational clinics as a part of outpatient service fellowships to local physicians for post graduate study educational institutes and clinics for physicians and the development of community public health activities in cooperation with the hospital.

Miscellaneous grants totaling \$182 000 made by the Fund last year included appropriations to the American Conference on Hospital Service the American Society for the Control of Cancer the Foreign Language Information Service the League of Red Cross Societies for the forthcoming international conference of social work the Welfare Council of New York City for its research program the New York Tuberculosis Association and other health and welfare agencies.

CORRESPONDENCE

COMPULSORY VACCINATION IN PRIVATE SCHOOLS

Mr Editor

Lest there should be any misapprehension about my present attitude on the subject of compulsory vaccination in the private schools of the State and lest anyone should conclude that the weight of increasing years has dulled the enthusiasm which since 1916 has caused me annually to appear before the Legislative Committee on Public Health as an advocate of enforcing legislation will you give me space to say that it was considered futile to waste time this year in argument before a hostile Committee which would be undoubtedly supported as it was last year by an equally hostile Senate. As of course all your readers know the personnel of the two Houses remains unchanged from that of last year there having been no State Election in 1927.

Next year we shall see what we shall see and mean while our opponents may be oblivious of the fact that there is more smallpox in the United States than anywhere outside of Asia continue to chant the following cribbed from the daily press

'Why do doctors raise a clatter?
Ills we know are ever present
Morbidity talk already ample
Only causes trepidation
Let us then ignore the matter
Let us chat of simple pleasures—
Something cheerful, for example
Long live Anti Vaccination

SAMUEL B. WOODWARD

ON THE PRACTICE OF MEDICINE BY THE FIRE DEPARTMENT

March 9 1928

Editor of THE NEW ENGLAND JOURNAL OF MEDICINE
Dear Sir

As a direct sequel to Yandell Henderson's publication in the latest number of the *Journal of the American Medical Association* on the resuscitation of infants at birth by the use of carbon dioxide and the advice by him to call in the Fire Department when that agent is not at hand either in the home or hospital comes the *Boston Post* this morning with a front page write-up featuring just such an event but with the surprising subheading 'Fire Department Called when Medical Science Fails'.

As a matter of fact the saving of this infant's life according to press reports was directly due to Medical Science, as has been propounded since 1924 by Professor Henderson himself and the pity of it is that an agency outside the medical profession should have been called in to perform services which are distinctly within the realm of medicine. Henderson's latest article is a scathing denunciation of the medical profession for failure to make use of a proved agent for resuscitation and he would probably say that the lay publicity given by this morning's *Post* was no more than deserved by the inaction of the profession at large.

However in the defense of medicine in general and to the credit of one despised specialty in particular may I say that every professional anesthetist has at his immediate disposal and carries habitually in

his automobile the necessary apparatus and a supply of oxygen and carbon dioxide for the purposes of resuscitation so that for this purpose there is no need to go outside the regular profession. On the necessity for Hospitals to equip themselves with proper supplies I make no comment but the practice of medicine is for physicians and not the Fire Department.

Very truly yours,

RUSSELL F. SHELDON

AID FOR THE MISSISSIPPI DOCTOR

THE AMERICAN RED CROSS

Boston Metropolitan Chapter

March 12 1928

NEW ENGLAND JOURNAL OF MEDICINE

126 Massachusetts Avenue

Boston Mass

Gentlemen

Since I last wrote you on March 2nd we have received from Dr. John W. Cummin 9 Massachusetts Avenue a box containing an assortment of instruments and the following books for the Mississippi doctor: Atlas of Diseases of the Skin (Mracek)

Manual of Therapeutics (Parke, Davis & Company) Heart Disease (Broadbent) A Compend of the Practice of Medicine (Hughes) Textbook of Human Anatomy (Macallister) Elements of Anatomy (Quain) Clinical Examination of the Urine (Ogden)

This leaves the following things on the list yet to come: cystoscope hemoglobinometer general operating instruments the following books: Physiology Physiological Chemistry Pathology Surgery (Lewis) Pediatrics, Gynecology (Graves), Intravenous Therapy (Dutton) Urology (Young) Diet, Therapeutics.

If there are any other doctors readers of the JOURNAL, who have anything on this list that they would like to contribute, we should be glad to receive them.

Very truly yours

ROY M. CUSHMAN

NOTE—In further response to the appeal a copy of 'Human Anatomy' (Morris) has been sent to the Boston Metropolitan Chapter of the Red Cross.

DIPHTHERIA AFTER TONSILLECTOMY

Editor of THE NEW ENGLAND JOURNAL OF MEDICINE
Boston Mass

Will you kindly print following case article in your journal as I believe it is of great interest.

CASE. Boy 7 years of age was brought to my office for examination which disclosed large infected tonsils and a great deal of adenoid tissue. Tonsillectomy was advised. Boy was seen three days and morning before operation. He was in fine condition for the operation. Tonsillectomy was done by me and three days later I was called to see the patient. He had a marked bilateral submaxillary adenitis with a temperature of 101.2° and a slightly increased pulse. Respirations normal. Chest and lungs were negative. Examination of throat showed scar healing of tonsillectomy with fossae free of all tonsillar tissue. To satisfy myself I took a swab of his tonsillar fossae which came back with a diagnosis

Cause of death	Deaths in Rhode Island			
	Number		Rate per 100,000 estimated population.	
	1926	1925	1926	1925
Respiratory diseases other than bronchitis and pneumonia (all forms)	55	51	7.9	7.5
Diarrhea and enteritis (total)	128	147	18.5	21.6
Diarrhea and enteritis (under 2 years)	107	131	15.4	19.3
Diarrhea and enteritis (2 years and over)	21	16	3.0	2.4
Appendicitis and typhlitis	99	85	14.3	12.5
Hernia, intestinal obstruction	68	82	9.8	9.1
Cirrhosis of the liver	47	35	6.8	5.2
Nephritis	818	802	118.0	118.1
Puerperal septicemia	24	22	3.5	3.2
Puerperal causes other than puerperal septicemia	57	53	8.2	7.8
Congenital malformations and diseases of early infancy	565	547	81.5	80.5
Suicide	75	57	10.8	8.4
Homicide	21	12	3.0	1.8
Accidental and unspecified external causes (total)	453	527	65.4	77.6
Burns (conflagration excepted)	45	48	6.5	7.1
Accidental drowning	52	53	7.5	7.8
Accidental shooting	2	8	0.3	1.2
Accidental falls	93	88	13.4	13.0
Mine accidents	-	-	-	-
Machinery accidents	8	60	1.2	8.8
Railroad accidents	14	25	2.0	3.7
Collision with automobile	1	5	0.1	0.7
Other railroad accidents	13	20	1.9	2.9
Street-car accidents	14	15	2.0	2.2
Collision with automobile	2	3	0.3	0.4
Other street-car accidents	12	12	1.7	1.8
Automobile accidents (excluding collision with railroad and street-cars)	127	133	18.3	19.6
Injuries by vehicles other than railroad cars, street-cars, and automobiles ^{3/}	7	6	1.0	0.9
Excessive heat (burns excepted)	3	5	0.4	0.7
Other external causes	88	85	12.7	12.7
All other defined causes	658	699	96.4	102.9
Unknown or ill-defined causes	38	40	5.5	5.9

^{1/} Exclusive of stillbirths.

^{2/} Includes tabes dorsalis (locomotor ataxia) and general paralysis of the insane

^{3/} Includes airplane, balloon, and motorcycle accidents.

LEGISLATIVE NOTE

The Joint Judiciary Committee has reported leave to withdraw on House 748. This bill proposed to modify the present period of two years within which malpractice suits can be brought against physicians, surgeons and dentists.

RECENT DEATHS

CHAMBERLAIN—The death has been announced of Dr WILLIAM EUGENE CHAMBERLAIN, at his home in Rutland March 11, 1928, at the age of 67. He was a graduate of the University of Vermont College of Medicine in 1883, practiced in Princeton for five years moving to Rutland and joining the Massachusetts Medical Society in 1895. For 30 years he was medical examiner and was also physician to the Rutland Prison Camp.

BARRY—Dr THOMAS MATTHEW BARRY, a graduate of Tufts College Medical School in 1915, died at his home in Lynn, March 11, 1928, aged 35. He was born September 23, 1892, in Lynn, was gradu-

ated from Lynn Classical high school and served one year as house physician at St. John's Hospital, Lowell, as well as acting as an interne at Providence City Hospital for one year. In 1918, he was chief executive surgeon at the Throat and Nose Hospital in New York.

He was a member of Phi Theta Chi fraternity since 1911, and a member of George Washington court of Foresters of Lynn. He was a registered pharmacist, and succeeded his brother, John D. Barry, who conducted a pharmacy in West Lynn until 1918.

JOURNEY—Dr WARREN W. JOURNEY died suddenly in Boston on Monday, February 20, 1928.

He was a native of Weymouth, Nova Scotia, where he was born in 1866, the son of Robert W. and Emma Moore Journey. He received his medical training at Tufts Medical School where he was graduated in 1900. During the World War he was lieutenant in the Army serving as examining officer at the Massachusetts Institute of Technology. He was a member of the William Tell Club of Spencer Bay, Maine.

He is survived by his widow Lydia Parnell Journey, a daughter Roberta and a sister and brother

CORRESPONDENCE

COMPULSORY VACCINATION IN PRIVATE SCHOOLS

Mr Editor

Lest there should be any misapprehension about my present attitude on the subject of compulsory vaccination in the private schools of the State and lest anyone should conclude that the weight of increasing years has dimmed the enthusiasm which since 1916 has caused me annually to appear before the Legislative Committee on Public Health as an advocate of enforcing legislation will you give me space to say that it was considered futile to waste time this year in argument before a hostile Committee which would be undoubtedly supported as it was last year by an equally hostile Senate. As of course all your readers know the personnel of the two Houses remains unchanged from that of last year, there having been no State Election in 1927.

Next year we shall see what we shall see and mean while our opponents may oblivion of the fact that there is more smallpox in the United States than anywhere outside of Asia continue to chant the following cribbed from the daily press

Why do doctors raise a clatter?
Ills we know are ever present
Morbid talk already ample
Only causes trepidation
Let us then ignore the matter
Let us chat of simple pleasures—
Something cheerful for example
Long live Anti Vaccination

SAMUEL B WOODWARD

ON THE PRACTICE OF MEDICINE BY THE FIRE DEPARTMENT

March 9 1928

Editor of THE NEW ENGLAND JOURNAL OF MEDICINE
Dear Sir

As a direct sequel to Yandell Henderson's publication in the latest number of the *Journal of the American Medical Association* on the resuscitation of infants at birth by the use of carbon dioxide and the advice by him to call in the Fire Department when that agent is not at hand either in the home or hospital comes the *Boston Post* this morning with a front page write-up featuring just such an event but with the surprising subheading *Fire Department Called when Medical Science Fails*.

As a matter of fact the saving of this infant's life according to press reports, was directly due to Medical Science, as has been propounded since 1924 by Professor Henderson himself and the pity of it is that an agency outside the medical profession should have been called in to perform services which are distinctly within the realm of medicine. Henderson's latest article is a scathing denunciation of the medical profession for failure to make use of a proved agent for resuscitation, and he would probably say that the lay publicity given by this morning's *Post* was no more than deserved by the inaction of the profession at large.

However in the defense of medicine in general and to the credit of one despoiled specialty in particular may I say that every professional anesthetist has at his immediate disposal and carries habitually in

his automobile the necessary apparatus and a supply of oxygen and carbon dioxide for the purposes of resuscitation so that for this purpose there is no need to go outside the regular profession. On the necessity for Hospitals to equip themselves with proper supplies I make no comment but the practice of medicine is for physicians and not the Fire Department.

Very truly yours

RUSSELL F. SHELDON

AID FOR THE MISSISSIPPI DOCTOR

THE AMERICAN RED CROSS

Boston Metropolitan Chapter

March 12 1928

NEW ENGLAND JOURNAL OF MEDICINE

126 Massachusetts Avenue

Boston Mass

Gentlemen

Since I last wrote you on March 2nd we have received from Dr. John W. Cummin 9 Massachusetts Avenue a box containing an assortment of instruments and the following books for the Mississippi doctor: *Atlas of Diseases of the Skin* (Mracek), *Manual of Therapeutics* (Parke Davis & Company), *Heart Disease* (Broadbent), *A Compend of the Practice of Medicine* (Hughes), *Textbook of Human Anatomy* (Macallister), *Elements of Anatomy* (Quain), *Clinical Examination of the Urine* (Ogden).

This leaves the following things on the list yet to come: cystoscope, hemoglobinometer, general operating instruments, the following books: *Physiology*, *Physiological Chemistry*, *Pathology*, *Surgery* (Lewis), *Pediatrics*, *Gynecology* (Graves), *Intravenous Therapy* (Dutton), *Urology* (Young), *Diet*, *Therapeutics*.

If there are any other doctors readers of the JOURNAL who have anything on this list that they would like to contribute we should be glad to receive them.

Very truly yours

ROY M. CUSHMAN

NOTE.—In further response to the appeal a copy of *'Human Anatomy'* (Morris) has been sent to the Boston Metropolitan Chapter of the Red Cross.

DIPHTHERIA AFTER TONSILLECTOMY

Editor of THE NEW ENGLAND JOURNAL OF MEDICINE
Boston, Mass

Will you kindly print following case article in your journal as I believe it is of great interest.

CASE. Boy 7 years of age was brought to my office for examination which disclosed large infected tonsils and a great deal of adenoid tissue. Tonsillectomy was advised. Boy was seen three days and morning before operation. He was in fine condition for the operation. Tonsillectomy was done by me and three days later I was called to see the patient. He had a marked bilateral submaxillary adenitis with a temperature of 101.2 and a slightly increased pulse. Respirations normal, chest and lungs were negative. Examination of throat showed scar healing of tonsillectomy with fossae free of all tonsillar tissue. To satisfy myself, I took a swab of his tonsillar fossae which came back with a diagnosis

Cause of death	Deaths in Rhode Island			
	Number		Rate per 100,000 estimated population.	
	1926	1925	1926	1925
Respiratory diseases other than bronchitis and pneumonia (all forms)	55	51	7.9	7.6
Diarrhea and enteritis (total)	128	147	18.5	21.6
Diarrhea and enteritis (under 2 years)	107	131	15.4	19.3
Diarrhea and enteritis (2 years and over)	21	16	3.0	2.4
Appendicitis and typhlitis	99	85	14.3	12.6
Hernia, intestinal obstruction	68	62	9.8	9.1
Cirrhosis of the liver	47	35	6.8	5.2
Nephritis	818	802	118.0	118.1
Puerperal septicaemia	24	22	3.5	3.2
Puerperal causes other than puerperal septicaemia	57	53	8.2	7.8
Congenital malformations and diseases of early infancy	565	547	81.5	80.5
Suicide	75	57	10.8	8.4
Homicide	21	12	3.0	1.8
Accidental and unspecified external causes (total)	453	527	65.4	77.6
Burns (conflagration excepted)	45	48	6.5	7.1
Accidental drowning	52	53	7.5	7.8
Accidental shooting	2	8	0.3	1.2
Accidental falls	93	88	13.4	13.0
Mine accidents	-	-	-	-
Machinery accidents	8	60	1.2	8.8
Railroad accidents	14	25	2.0	3.7
Collision with automobile	1	5	0.1	0.7
Other railroad accidents	13	20	1.9	2.9
Street-car accidents	14	15	2.0	2.2
Collision with automobile	2	3	0.3	0.4
Other street-car accidents	12	12	1.7	1.8
Automobile accidents (excluding collision with railroad and street-cars)	127	133	18.3	19.6
Injuries by vehicles other than railroad cars, street-cars, and automobiles ^{3/}	7	5	1.0	0.9
Excessive heat (burns excepted)	3	5	0.4	0.7
Other external causes	88	85	12.7	12.7
All other defined causes	658	699	95.4	102.9
Unknown or ill-defined causes	38	40	5.5	5.9

^{1/} Exclusive of stillbirths.

^{2/} Includes tabes dorsalis (locomotor ataxia) and general paralysis of the insane.

^{3/} Includes airplane, balloon, and motorcycle accidents.

LEGISLATIVE NOTE

The Joint Judiciary Committee has reported leave to withdraw on House 748. This bill proposed to modify the present period of two years within which malpractice suits can be brought against physicians, surgeons and dentists.

RECENT DEATHS

CHAMBERLAIN—The death has been announced of DR WILLIAM EUGENE CHAMBERLAIN at his home in Rutland March 11 1928, at the age of 67. He was a graduate of the University of Vermont College of Medicine in 1883 practiced in Princeton for five years, moving to Rutland and joining the Massachusetts Medical Society in 1895. For 30 years he was medical examiner and was also physician to the Rutland Prison Camp.

BARRY—DR. THOMAS MATTHEW BARRY, a graduate of Tufts College Medical School in 1915, died at his home in Lynn, March 11, 1928 aged 35. He

ated from Lynn Classical high school and served one year as house physician at St. John's Hospital Lowell as well as acting as an interne at Providence City Hospital for one year, in 1918 he was chief executive surgeon at the Throat and Nose Hospital in New York.

He was a member of Phi Theta Chi fraternity since 1911, and a member of George Washington court of Foresters of Lynn. He was a registered pharmacist, and succeeded his brother John D. Barry, who conducted a pharmacy in West Lynn until 1918.

JOURNEY—DR. WARREN W. JOURNEY died suddenly in Boston on Monday, February 20 1928.

He was a native of Weymouth Nova Scotia where he was born in 1866 the son of Robert W. and Emma Moore Journey. He received his medical training at Tufts Medical School where he was graduated in 1900. During the World War he was lieutenant in the Army, serving as examining officer at the Massachusetts Institute of Technology. He was a member of the William Tell Club of Spencer Bay Maine.

He is survived by his widow, Lydia Parnell Journey, a daughter Roberta and a sister and brother

cular Exercise" Dr W B Cannon introduced the speaker

The first case was presented by Dr Menard. The patient was a 45 year old Irish housemaid, whose chief point of interest was cyanosis. Family history was negative except that a sister and a cousin had cyanosis. Past history showed that she had pneumonia twice, thyroidectomy two years ago, and removal of ovarian tumor last December, after which she developed a pulmonary infarct. The patient has had the cyanosis for 32 years with no symptoms. Physical examination was essentially negative except for the cyanosis of mucous membranes, finger nails, fingers and toes. The heart was slightly enlarged with a systolic murmur at the apex. The urine stool and Wassermann were negative as was an X-ray of the chest. Blood nitrites were negative and the saliva showed a diminished nitrate content. On culture the saliva yielded an organism whose characteristics had not been determined. Dr Christian characterized the case as enterogenous cyanosis so-called because many of these cases occur after intestinal disturbances. The cases divide themselves into two groups those with sulph-hemoglobin and those with methemoglobin in the blood. Methemoglobinemia is supposed to originate from absorbed nitrites but they could not be demonstrated in the blood serum in this case. The other remarkable thing about the case was the apparent familial relationship.

The second case was presented by Dr Ormond. The patient was a 40 year old automobile mechanic who entered the hospital a month and a half ago complaining of mid-epigastric pain of two weeks duration. Family history and past history were negative except for typhoid fever 26 years ago. Two weeks before entry he was suddenly seized with a mid-epigastric pain which was not relieved by vomiting. After three days the pain centered about one inch to the right of the umbilicus. A week later he was sent in from the Out-Patient Department where he had applied for relief from the pain. Examination on entry showed right rectus spasm, temperature 102°, pulse 100 and white count 17000. On operation Dr Cheever opened into an abscess cavity from which was obtained about 40 cc of purulent material and what was thought to be a gallstone. Three weeks after operation intravenous cholecystograms were done revealing a normal gall bladder. Second operation exposed a sinus tract leading from the scar of the first operation to the hepatic flexure of the colon. The base of the appendix was found here removed and the wound drained. Convalescence has been uneventful. The object obtained in the first operation consisted of some plant hairs and fibers and muscle fibers, undoubtedly being a fecolith.

Dr Bock outlined his work as beginning in the latter part of 1924. Since then, four series have been done using four different subjects ranging from an untrained man with a vital capacity of 3800 cc. to Clarence DeMar the runner whose vital capacity was 5500 cc. The methods used were the ordinary ones of the laboratory such as blood pressure pulse and Van Slyke gas analysis and a few new kinds of apparatus as occasion demanded. The basis for comparison was the oxygen consumption and the results as far as possible were plotted against these figures.

A great variance and difference in the results between the trained and untrained man were seen. On moderate work the pulse in DeMar rose from around 60 to 115 while in the untrained man the pulse rate increased to 160. The output of the heart per systole increased but that of DeMar only 30% while that of the untrained man increased 110%. In the same subject the systolic blood pressure rose to 175 mm and in DeMar who was doing double the amount of work, showed a systolic pressure of

160 mm. The measurement of the amount of oxygen left in the venous blood after work showed a similar contrast. It was shown that a point was reached where no more oxygen can be taken from the blood. Any increase of oxygen to the tissues must be obtained by an increase in pulse rate or by a larger systolic output. A third compensatory phenomenon was shown to be acidosis which enabled a greater washing out of oxygen from the blood to take place.

In the untrained man as the amount of lactic acid increased the CO in the blood decreased no comparable change was shown in DeMar. As the bicarbonate of the blood increased, the CO volume per cent decreased accompanied by a drop in pH. In regards to tidal air, while DeMar breathed faster he had a small tidal air volume in comparison to the other subjects. A study of the R.Q. showed that the body soon reaches a level of work, usually in about five minutes. The taking of food had no influence on the R.Q. In the untrained man the level of work was reached sooner.

Dr Bock then offered an explanation for these results. It has been shown that glycogen is the sole source of muscular energy. During moderate work the transformation of fat is going on to keep the R.Q. low. If heavy work is done then little fat can be utilized, glycogen is used almost entirely and the R.Q. tends to approach one. DeMar works better not only because of increased space for diffusion in his lungs the better heart action etc., but the muscle cells are able to take care of the products of increased metabolism without losing them into the circulation causing fatigue.

In summary Dr Bock emphasized the point that in comparing this work to that of others one must note that this work was done at a steady rate, each reading being for twenty minutes or more and a stationary bicycle was used. The experiments show that almost all functions of the body which can be measured show remarkable changes in response to training though we do not know what part the endocrine glands and the nervous system have upon the mechanism.

In the interesting discussion which followed Dr Cannon pointed out that the spleen normally contains about twice as many red blood cells as the circulating blood. As shown by experiment, during excitement or in work the spleen contracts causing a 20% increase of red blood cells in the circulating blood.

LECTURE BY DR. ABRAHAM MYERSON

Dr Abraham Myerson Professor of Neurology at Tufts Medical School gave a lecture entitled "Psychiatry and Law" under the auspices of the Phillips Brooks Association on Thursday, February 16, 1928 at the Harvard Medical School.

Psychiatry Dr Myerson explained, was begotten by law. Since law recognized insanity as an excuse for evading responsibility for a crime, a criterion of sanity was adopted and psychiatry established to define this basis. Essentially crime is the behavior of a person which has not the social sanction of a given time. For instance murder is commonly a crime, but in war and in communities where it is the accepted procedure for the righting of a private wrong it is permissible. The application of law in dealing with the criminal has passed through three changes. At first the law considered all people essentially bad, immoral with tendencies to follow egotistic impulses without regard to law. German Socialists and Ronssean initiated the movement to consider crime as the result of environment. Finally Lombroso suggested the study of the criminal and not the crime contending that criminals are abnormal and may be classified as epileptic or atavistic. His theory has not been proved satisfactory and yet the general underlying principle is fundamentally correct. Since the law has merely substituted public for private

of positive for diphtheria Antitoxin was given and the boy made an uneventful recovery

The point I wish to stress is the advisability in taking a swab of fossae following tonsillectomy when complications develop It is the only way to make sure that the healing scar tissue of tonsillectomy is not the membrane of diphtheria

Truly yours,

HYMAN S QUEEN, M D

NEWS ITEMS

PERSONAL ITEMS—Dr John B Thomes, of Pittsfield, has left the hospital, where he spent eleven weeks recovering from severe fractures of the pelvis He is now at his home

Dr Thomas P Hennelly, of Pittsfield, is under treatment in St Vincent's Hospital in Worcester

Dr George H Thompson, of North Adams, has returned from a month of post graduate work, and has resumed his practice

Doctor and Mrs George S Reynolds, of Pittsfield, are the parents of twin daughters Dr Reynolds was formerly connected with the Massachusetts General Hospital

THE APPOINTMENT OF DR CLIFFORD L DERICK—Clifford L. Derick, M D, Medical School of McGill University, 1918, has been appointed physician to the Peter Bent Brigham Hospital, Boston, Massachusetts, to succeed Dr Cyrus C Sturgis, recently appointed Professor of Medicine at the University of Michigan Dr Derick served first for three years at the Montreal General Hospital, then as a National Research Council Fellow and subsequently as Assistant Resident Physician at the Peter Bent Brigham Hospital Since July 1, 1924, he has been Assistant Resident Physician at the Rockefeller Hospital, New York City

NOTICES

UNITED STATES PUBLIC HEALTH SERVICE

CHRONOLOGICAL LIST OF CHANGES OF DUTIES AND STATIONS OF COMMISSIONED AND OTHER OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

MARCH 7, 1928

A A. Surgeon C J Martin Relieved from further duty at Roma, Texas, effective March 1 February 27, 1928

Surgeon G C Lake Directed to proceed from Stapleton, N Y, to Washington, D C, and return, for conference at the Bureau in connection with the investigation and control of venereal diseases March 1, 1928

Surgeon L E Hooper Directed to proceed to the vicinity of Galveston and Houston Texas, for the purpose of investigating the use of gas heaters and whether their use is resulting in deleterious effects on health March 2, 1928

Consultant D D Kimball Directed to proceed from New York, N Y, to Washington, D C, and return, in connection with ventilation studies March 2 1928

Consultant C E A Winslow Directed to proceed from New Haven, Conn, to Washington D C and return, in connection with ventilation studies March 2 1928

A A. Surgeon O C Wenger Directed to proceed to Waco, Texas, and return, for the purpose of attending the Texas Conference of Social Welfare to be held in that city March 26 28 March 2, 1928

A A. Surgeon W G Nelson Authorized to proceed from Chelsea, Mass, to New York, N Y, and report to U S P & I Agency, Inc, to testify in behalf of the United States in a trial suit for damages March 3, 1928

Surgeon Joseph Goldberger Directed to proceed from Washington, D C, to Milledgeville, Ga, and return, in connection with studies of nutrition March 5, 1928

Assistant Surgeon General F C Smith Directed to proceed from Washington, D C, to Philadelphia, Pa, and return, to confer with the Medical Officer in Charge, U S Public Health Service Relief Station. March 5, 1928

Assistant Surgeon General R C Williams Directed to proceed from Washington, D C, to New York City, and return, for the purpose of attending the conference of the New York Academy of Medicine, March 22, to consider the adoption of a uniform nomenclature of diseases March 6, 1928

Statistician Edgar Sydenstricker Directed to proceed from Washington, D C, to New York, N Y, for the purpose of attending the conference of the New York Academy of Medicine, March 22, to consider the adoption of a uniform nomenclature of diseases March 6 1928

BOARDS CONVENED

Board convened to make physical examination of technical assistant in sanitary engineering, at call of chairman, in New York, N Y

Detail for the Board

Senior Surgeon C H Lavinder

Assistant Surgeon General (R) W S Terriberry
Official

H S CUMMING, Surgeon General

NEW YORK PHYSICIANS ART EXHIBIT

The Second Annual New York Physicians Art Exhibit will open at the Academy of Medicine, Fifth Avenue and 103rd Street, New York City, on April 1, 1928 Any physician is eligible to contribute original work in painting sculpture, drawing etching, etc. Contributions must be sent to the New York Physicians' Art Exhibit Committee Care of Superintendent, New York Academy of Medicine, 103rd Street and Fifth Avenue, New York City, not later than March 21 1928 Each piece should be labelled (on the back) with title and name and address of contributor Duplicates of these labels are then to be sent by mail to the Committee at the above address, before March 21

The New York Physicians Art Club, under whose auspices this exhibit is given particularly invites out of town physicians to participate in this exhibition

All correspondence should be addressed to Dr Henry A. Bancel, 1 West Sixty-eighth Street, New York City

REPORTS AND NOTICES OF MEETINGS

HARVARD MEDICAL SOCIETY

The Harvard Medical Society held a meeting at the Peter Bent Brigham Hospital on February 28 1928, at 8 15 o'clock After the presentation of cases Dr Arlie V Bock spoke on The Physiology of Mus

BOSTON MEDICAL HISTORY CLUB

A meeting will be held on Friday, March 23rd 1928 at the Boston Medical Library at 8 15 P M

PROGRAM

- 1 An Obituary Sketch of Dr John W Elliott.
Dr E A. Codman
- 2 The Influence of Galen on Harvey Dr Isador Coriat.

HENRY R VIETS *Secretary*

THE NORFOLK DISTRICT MEDICAL SOCIETY

23 Bay State Road, March 18

The Censors of the Norfolk District Medical Society will meet for the examination of candidates May 3rd 1928 in the Roxbury Masonic Temple 171 Warren Street, Roxbury at 4 P M

Applications together with certificate of graduation from Dean of School must be in the hands of the Secretary at least one week previous to date of examination

FRANK S CRICKSHANK M.D. *Secretary*

23 Bay State Road Boston.

SOCIETY MEETINGS

March 23—Boston Medical History Club Complete notice appears on page 271

March 27—Harvard Medical Society Detailed notice appears on page 270

March 29—Meeting of the New England Section of the American Academy of Physiotherapy Detailed notice appears on page 270

March 30 and 31—Second Annual Conference on Public Health. Complete notice appears on page 224 Issue of March 15

March 31—Boston City Hospital Clinical Meeting Complete notice appears on page 270

April 3—Hartford County Medical Society and the New England Heart Association Complete notice appear on page 270

June 18 22—Convention of the Catholic Hospital Association. Complete notice appears on page 1597 Issue of February 16

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

May 2, 1928 (Wednesday)—Annual meeting at Haverhill 12 30 P M at the Haverhill Country Club Brickett Hill Gile Street, Haverhill

May 3 1928 (Thursday)—Censors meet for examination of candidates at Hotel Bartlett, 95 Main Street, Haverhill, at 2 P M. Candidates should apply to the Secretary J Forrest Burnham M.D. 567 Haverhill Street, Lawrence at least one week prior

Essex South District Medical Society

April 11 (Wednesday)—Essex Sanatorium Middleton Clinic at 5 P M. Dinner at 7 P M.

Dr Raymond S Titus Obstetrical Emergencies
Discussion by Drs. J J Egan of Gloucester and A T Hawes of Lynn 10 minutes each and from the floor

May 3 (Thursday)—Censors meet at Salem Hospital for the examination of candidates at 3 30 P M. Candidates should apply to the Secretary Dr R. E Stone Beverly at least one week prior

May 8 (Tuesday)—Annual meeting Detailed notice appears on page 1437 Issue of January 26

Norfolk District Medical Society

March 27—See page 270 for complete notice

May 3—Censors meeting Roxbury Masonic Temple 4 P M. Applications will be mailed by the Secretary upon request. Detailed notice appears on page 271

May 8—Annual meeting Details to be announced

Suffolk District Medical Society

Combined meetings of the Suffolk District Medical Society and the Boston Medical Library will be held at the Boston Medical Library 8 The Fenway at 8 15 P M as follows

March 28—Medical Section The Use and Misuse of Vaccines Dr Hans Zinsser Dr Francis M. Rackemann Dr Charles H Lawrence

April 25—Annual meeting Election of officers Prof Julius Bauer Professor of Medicine in the University of Vienna, and Physician-in-Chief to the Polyclinic will deliver an address His subject will be announced later

The medical profession is cordially invited to attend these meetings

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear

BOOK REVIEWS

Tonic Hardening of the Colon By T STACEY WILSON London Oxford University Press 1927 Pages 210

From a reading of the 210 pages of this book, the impression is gained that its author is an educated man an able psychologist, and a keen clinician who has doubtless immensely benefited many of the intestinal invalids with whom he has come in contact. Furthermore he seems fortunate in having been able to produce rapid and satisfactory results in a difficult type of case, depending for his cures mostly upon three factors simple diet, intestinal antiseptics by salol and the control of spasm by tincture of hyocyamus

The book is worth reading on account of its many clinical histories which illustrate the extraordinary complexity of the symptoms which may afflict the patient who suffers from a combination of intestinal and mental difficulties Viewed thus, the book is of distinct interest to all clinicians who come in contact with patients complaining of both abdominal and mental symptoms

It is another matter when one tries to follow the author's line of reasoning in his attempt to connect his clinical experiences with the science of physiology by way of the very specialized process of tonic hardening of the colon There would have been less to be said about it, had he been satisfied with the title of Spasm of the Colon Such a title states a clinical observation without going into its causation

The author has however chosen to give his book a title which immediately raises the question of whether or not his thesis has been proven by the contents of the book. To this the reader is likely to reply that it has not been proven Clinically speaking the book is interesting Scientifically speaking it is unsatisfactory About two-thirds of the book is given over to the setting forth of a mass of opinions and probabilities Some forty pages out of the total of 196 are devoted to physiological considerations The reader will however find frequent gaps in logic which, if he be somewhat scientifically trained, may prove difficult of jumping

After carefully defining what he means by tonic hardening of the colon this designation being correctly connected with the static or postural muscular activity first recognized by Sherrington the author proceeds to use this very specialized term interchangeably with the looser expression of spasm of the colon and with the even looser expression of colon disturbance

This interchangeable use of these terms may be

vengeance and psychiatry has instituted the study of the criminal, the first conflict is obvious

Murder is the chief example which brings together psychiatry and law. Since law is a fight and medicine an art founded on the sciences, the psychiatrist has not figured to advantage when the two are brought together. To obviate this a law has been passed in Massachusetts requiring two psychiatrists to be appointed by the Commissioner of Mental Diseases who shall examine the defendant before the trial to determine his mental condition. There are two kinds of murders, first, those perpetrated in connection with another crime and second, those done by insane people which call for expert analysis. In sane people are more prone to commit murder than any crime. Here the application of psychiatry and law is conflicting. Psychiatry may affirm that the defendant is sane, but irresponsible. The law contends that if the defendant is sane he is responsible. Again, the law believes in the irresistible impulse, while psychiatry upholds no such premise for any momentary lack of will, for example.

Finally, the murder rate, contrary to the general belief, is highest where the alien rate is lowest. Criminals have two main characteristics. Not only are they people with little public interest but they are unorganized extroverts, that is, lacking in organized purpose which is the result of social training and lack of education.

The meeting was well attended and of unusual interest, not only because Dr. Myerson had formerly been connected with the Harvard Medical School, but also because of the many illustrations which made his arguments clear.

THE NORFOLK DISTRICT MEDICAL SOCIETY

A regular meeting of the Norfolk District Medical Society will be held in the Norwood Hospital March 27, 1928, at 8 o'clock P. M. Telephone Norwood 0470.

Communications

Trichinosis, Dr. H. B. C. Riemer

Sarcomata in Children, Dr. A. S. Hartwell

Chronic Laryngeal Stenosis, Dr. Leighton F. Johnson

This meeting has been arranged by our members in the outlying districts and has been very carefully planned to provide for us an interesting and pleasant evening. It is hoped all will make an endeavor to attend.

Previous to the meeting and beginning at 7:30 P. M. groups will be conducted about the hospital for the purpose of inspection of the institution.

Opportunity for discussion of the papers will be given and there will be a collation after adjournment.

FRANK S. CRUICKSHANK,
Secretary

23 Bay State Road Boston

HARVARD MEDICAL SOCIETY

The next regular meeting of the Harvard Medical Society will be held as usual in the amphitheatre of the Peter Bent Brigham Hospital Tuesday evening March 27th at 8:15 P. M. The program follows:

Presentation of cases

The clinical significance of abnormal blood pressures. Sir Humphry Rolleston, Regius Professor of Medicine at Cambridge University, Physician in Chief, Pro tempore P. B. B. H.

PERCIVAL BAILEY Secretary

BOSTON CITY HOSPITAL CLINICAL MEETING MARCH 31, 1928—11 A. M.

PROGRAM

1 Dr. George W. Papan "A Case of Total Subperiosteal Resection of the Tibia with Complete Regeneration within Six Months"

2 Dr. Frank Fremont-Smith "Spinal Fluid in Meningitis"

3 Dr. Thomas K. Richards "One Case of Disease of the Knee Joint"

4 Dr. Townsend W. Thorndike "Report of a Case of Dermatitis Congelation with Complete Destruction of Tissues. Demonstration of a Case of Gummatous Infiltration of Both Testicles"

5 Dr. Augustus Riley "Pyelographic Studies as an Essential Aid in Diagnosis Made in the Out Patient Department"

6 Dr. George P. Sanborn "Effect of Swift Ellis Treatment upon the Spinal Fluid in Neurosyphilis"

7 Dr. John A. Foley "Ambulatory Treatment of Gastric Ulcer"

8 Dr. William R. Morrison "Series of Perforated Ulcers of the Stomach and Duodenum Operated on under Novocain Local Anesthesia with Posterior astro-Enterostomy and Closure of the Abdomen without Drainage"

9 Dr. Charles C. Lund "Relation of the Basal Metabolism to the Action of Morphine"

10 Dr. Louis J. Ullian "Basal Metabolism in Icthyosis. A Severe Diabetic with Abscesses at Site of Insulin Injection"

11 Dr. Percy B. Davidson "Ulcer of Esophagus"

HARTFORD COUNTY MEDICAL SOCIETY NEW ENGLAND HEART ASSOCIATION

APRIL 3, 1928

Hunt Memorial Library
38 Prospect Street, Hartford Conn.

4:00 P. M. CLINIC

1 Heart Disease and Hypertension Dr. William H. Robey, Boston

2 Heart Disease and Pregnancy Dr. Burton E. Hamilton Boston

3 Heart Disease in Children Dr. Hyman Green, Boston

8:00 P. M.

1 The Heart in Anaesthesia and Surgery Dr. H. M. Marvin, New Haven

2 The Present Status of Cervical Sympathectomy Dr. Samuel A. Levine, Boston

3 Paravertebral Alcohol Injections in Angina Pectoris Dr. Paul D. White Boston

MEETING OF THE NEW ENGLAND SECTION OF THE AMERICAN ACADEMY OF PHYSIOTHERAPY

The New England Section of the American Academy of Physiotherapy will hold a meeting on Thursday March 29, at 8:15 P. M. at John Ware Hall, Boston Medical Library.

Subject: Ultra Violet Irradiation by Frank B. Granger, M.D.

Discussion to be opened by Edwin T. Wyman, M.D.

The medical profession is cordially invited

BOSTON MEDICAL HISTORY CLUB

A meeting will be held on Friday, March 23rd 1928 at the Boston Medical Library at 8 15 P M

PROGRAM

- 1 An Obituary Sketch of Dr John W Elliott
Dr E A Codman
- 2 The Influence of Galen on Harvey Dr Isador Coriat.

HENRY R VIETS *Secretary*

THE NORFOLK DISTRICT MEDICAL SOCIETY

23 Bay State Road, March 18

The Censors of the Norfolk District Medical Society will meet for the examination of candidates May 3rd 1928 in the Roxbury Masonic Temple 171 Warren Street, Roxbury at 4 P M

Applications together with certificate of graduation from Dean of School must be in the hands of the Secretary at least one week previous to date of examination

FRANK S CRUICKSHANK M.D. *Secretary*
23 Bay State Road Boston

SOCIETY MEETINGS

March 23—Boston Medical History Club Complete notice appears on page 271

March 27—Harvard Medical Society Detailed notice appears on page 270

March 29—Meeting of the New England Section of the American Academy of Physiotherapy Detailed notice appears on page 270

March 30 and 31—Second Annual Conference on Public Health. Complete notice appears on page 224 issue of March 15

March 31—Boston City Hospital Clinical Meeting Complete notice appears on page 270

April 3—Hartford County Medical Society and the New England Heart Association Complete notice appears on page 270

June 18 22—Convention of the Catholic Hospital Association. Complete notice appears on page 1597 issue of February 16

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

May 2, 1928 (Wednesday)—Annual meeting at Haverhill 12 30 P M at the Haverhill Country Club Brickett Hill Gile Street, Haverhill

May 3 1928 (Thursday)—Censors meet for examination of candidates at Hotel Bartlett, 95 Main Street, Haverhill at 2 P M. Candidates should apply to the Secretary J Forrest Burnham M.D. 567 Haverhill Street, Lawrence at least one week prior

Essex South District Medical Society

April 11 (Wednesday)—Essex Sanatorium Middleton Clinic at 5 P M. Dinner at 7 P M

Dr Raymond S Titus Obstetrical Emergencies
Discussion by Drs. J J Egan of Gloucester and A T Hawes of Lynn 10 minutes each and from the floor

May 3 (Thursday)—Censors meet at Salem Hospital for the examination of candidates at 3 30 P M. Candidates should apply to the Secretary Dr R E Stone Beverly at least one week prior

May 8 (Tuesday)—Annual meeting Detailed notice appears on page 1437 issue of January 26

Norfolk District Medical Society

March 27—See page 270 for complete notice

May 3—Censors meeting Roxbury Masonic Temple 4 P M. Applications will be mailed by the Secretary upon request. Detailed notice appears on page 271

May 8—Annual meeting Details to be announced

Suffolk District Medical Society

Combined meetings of the Suffolk District Medical Society and the Boston Medical Library will be held at the Boston Medical Library 8 The Fenway at 8 15 P M as follows

March 28—Medical Section The Use and Misuse of Vaccines
Dr Hans Zinsser Dr Francis M Rackemann Dr Charles H Lawrence

April 25—Annual meeting Election of officers Prof Julius Bauer Professor of Medicine in the University of Vienna and Physician-in-Chief to the Polyclinic will deliver an address His subject will be announced later

The medical profession is cordially invited to attend these meetings

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear

BOOK REVIEWS

Tonic Hardening of the Colon BY T STACEY WILSON
London Oxford University Press 1927
Pages 210

From a reading of the 210 pages of this book, the impression is gained that its author is an educated man, an able psychologist, and a keen clinician who has doubtless immensely benefited many of the intestinal invalids with whom he has come in contact. Furthermore he seems fortunate in having been able to produce rapid and satisfactory results in a difficult type of case depending for his cures mostly upon three factors simple diet intestinal antispasmodics by salol and the control of spasm by tincture of hyocyanus.

The book is worth reading on account of its many clinical histories which illustrate the extraordinary complexity of the symptoms which may afflict the patient who suffers from a combination of intestinal and mental difficulties. Viewed thus, the book is of distinct interest to all clinicians who come in contact with patients complaining of both abdominal and mental symptoms.

It is another matter when one tries to follow the author's line of reasoning in his attempt to connect his clinical experiences with the science of physiology by way of the very specialized process of tonic hardening of the colon. There would have been less to be said about it, had he been satisfied with the title of Spasm of the Colon. Such a title states a clinical observation without going into its causation.

The author has however chosen to give his book a title which immediately raises the question of whether or not his thesis has been proven by the contents of the book. To this the reader is likely to reply that it has not been proven. Clinically speaking the book is interesting. Scientifically speaking it is unsatisfactory. About two-thirds of the book is given over to the setting forth of a mass of opinions and probabilities. Some forty pages out of the total of 196 are devoted to physiological considerations. The reader will however find frequent gaps in logic which, if he be somewhat scientifically trained may prove difficult of jumping.

After carefully defining what he means by tonic hardening of the colon this designation being correctly connected with the static or postural muscular activity first recognized by Sherrington the author proceeds to use this very specialized term interchangeably with the looser expression of spasm of the colon and with the even looser expression of colon disturbance.

This interchangeable use of these terms may be

illustrated by a few quotations from the last chapter of the book, which is entitled "Aphorisms" For example "In general, when, in a dyspeptic patient, the colon is tender and abnormally hard on palpation, reserve a definite diagnosis until treatment has lessened the colon disturbance"

"If mental inertia or physical lassitude occurs unexpectedly during working hours, suspect a colon origin"

"Abdominal pain which is brought on or increased by exertion after meals is almost certainly due to tonic colon hardening"

"If a patient is liable to wake between midnight and 4 A. M., suffering from some form of mental misery, the cause is almost certainly tonic colon hardening"

"If mental symptoms of any kind occur as the result of physical exertion, or are due to the vibration of a shaky vehicle suspect tonic colon hardening"

"The sudden onset of mental symptoms such as depression, obsessions, etc., in a patient previously free from them is suggestive of the onset of tonic colon hardening"

The above specimen statements from the chapter in the book which would seem to correspond to the one devoted in a strictly scientific publication to a summary of the whole give an idea of the unsupported statements which appear throughout the book They may be true, but they are 'not proven'

To the reviewer, it seems distinctly unfortunate that the author could not have been satisfied with an entertaining presentation of his actual experiences with a difficult type of gastrointestinal patient As it is, the book is more or less ruined by the authors attempt to prove these clinical observations dependent upon such a specialized form of physiologic activity of the intestinal musculature as tonic hardening of the colon'

Food Infections and Food Intoxications By SAMUEL R. DAMON The Williams & Wilkins Company, Baltimore, Md pp 264, price \$4.

This book contains a great deal of information about infections, intoxications, and parasitic diseases acquired from food, that has not been collected previously in a single volume In part one paratyphoid, tuberculosis undulant fever septic sore throat, and actinomycosis are described Part two includes information about botulism, mushroom poisoning, grain intoxications, milk sickness, potato poisoning and disturbances derived from fish and shell fish And part three gives a special account of trichinosis, taeniasis, and helminth infestation and general observations on other parasitic diseases Each subject is treated succinctly though thoroughly For instance, in the description of trichinosis the historical aspect of the disease is first taken up then the occurrence of the infection in lower animals and the life history of the parasite, later the symptomatology, the laboratory diagnosis, differential diagnosis, pathology, and mortality and finally the treatment and prophylaxis are given. The arrangement of the book is excellent, a moderate number of illustrations aid in understanding the subjects and very complete references are listed The index is not very full, but a more complete one is unnecessary in a book written in such an orderly way The book should find a place in all medical

libraries and should prove a valuable reference book for food chemists, physicians, and nutrition experts.

Nutrition and Diet in Health and Disease By JAMES S MOLESTER, M.D Philadelphia W B Saunders Company 1927 Pages, 783

In a well presented book of 783 pages, the author offers one of the latest of the large and growing family of encyclopedic text books on diet. The book has the virtues and otherwise of all books of this character, but, being one of the latest, it is at least for the moment, one of the best available

Much of the total space is given over to routine diets, and to the reprinting of many tables and charts taken from other books

The chief disadvantage of this book is inherent in its encyclopedic nature Already, there are thousands and thousands of pages available upon diet, most of which tend toward the parrot or pigeon hole system of fitting the patient to a special diet, rather than toward the perhaps more intellectual and logical system of teaching principles, upon the basis of a knowledge of which, a diet for the individual or special patient may easily be evolved

The presence of occasional typographical errors, such as 'proceeded' for 'preceded', and 'heeping' for 'heaping', both on page 652, and the occasional occurrence of direct clinical statements by the author which are perhaps open to question, do not greatly detract from the very real value which this book should have for the worker somewhat removed from easy access to specialized literature on diet, the worker who seeks conscientiously to benefit his patient by the most intelligent possible application to each case of the most recent information concerning the fundamental, much talked of, but for the most part poorly applied subject of diet.

Medical Insurance Examinations

A textbook valuable for insurance practice, particularly in the Dominion of South Africa, for which it is written It is a plea for modified ratings in order that sub-standard lives may be insured at some increase over the normal rates

This book is of interest to the general profession in giving them a point of view of which most of us know too little namely the evaluation of the effects of disease on the probable life of our patients

Ophthalmoscopy, Retinoscopy and Refraction By W A FISHER M.D, F.A.C.S, Chicago, Ill Second Revised and Enlarged Edition, with 260 illustrations, including 48 Colored Plates F A Davis Company, Publishers, Philadelphia, 1927

The author states in the preface of the volume that ophthalmoscopy and the fitting of glasses belong to the general practitioner The purpose of the volume is to teach this to the general man The book is adequately illustrated and is a perfectly good text book although the reviewer believes that such subjects as glaucoma are made very much too simple with the danger of giving a false sense of security in their treatment The reviewer does not believe that the general practitioner can acquire sufficient knowledge from a book of this sort to enable him to practice ophthalmology to the extent suggested by the author

The New England Journal of Medicine

VOLUME 198

MARCH 29, 1928

NUMBER 6

ORIGINAL ARTICLES

THE EVALUATION OF PRESENT METHODS OF TREATMENT OF LESIONS OF THE STOMACH AND DUODENUM*

BY DONALD C. BALFOUR, M.D., F.A.C.S.†

I APPRECIATE very much the honor of having been invited to address the Suffolk District Medical Society and it is very pleasing to believe that any remarks which I may make on the treatment of lesions of the stomach and duodenum will in all probability, be favorably received because the attitude of the medical profession of Boston on this question has always been characterized by a consistent conservatism which has had a most wholesome influence on the widely divergent opinions held on the subject.

Peptic ulcer, the most common organic disease of the stomach and duodenum, presents so many points worthy of discussion that I shall confine myself largely to evaluating the present methods of management of this disease. There are certain basic facts in connection with peptic ulcer which influence the selection of the method of treatment and also the results of such treatment. The most important of these facts are that peptic ulcer, once it has become established, is one of the most chronic conditions with which the physician has to deal, and exhibits the greatest variations in its uninterrupted course. It may heal spontaneously, it may heal under a very simple modification of the patient's habits of living, it may heal under more elaborate and more prolonged methods of management, it may be the direct cause of the death of the patient from hemorrhage, perforation, obstruction, or malignant degeneration, or indirectly from prolonged disability or it may progress to a chronic stage and become so resistant to any form of medical treatment that surgical treatment remains the only means of cure. Occasionally, even after the lesion is removed by some surgical procedure profoundly modifying the secretory, sensory, and motor functions of the stomach, the disease may recur and necessitate further surgical measures. All of these possibilities explain why the treatment of the disease is necessarily so varied, when treatment is disappointing, it is often due to an unwise selection of method. These variations in

the manifestations of peptic ulcer and in the methods of its treatment are in part an explanation of many of the extravagant claims made for certain methods of treating the disease. The published results of these methods present a curious paradox: on the one hand it is claimed that chronic duodenal ulcer can be cured almost invariably by medical management, on the other hand it is asserted that the only way to cure the same disease is to remove a large portion of the stomach.

It may be that the difficulties in treating this chronic disease can be attributed to our lack of knowledge of its cause. It is true that the manner in which the lesion is formed, its method of progress and the complications to which it gives rise are well known, but the reason why a small erosion in the gastric or duodenal mucosa should develop into a chronic process is still a matter of conjecture. Observations of great interest have recently been made to demonstrate the process of healing in peptic ulcer, and the variability in the rate of healing according to the situation of the ulcer. Fortunately an ulcer entirely comparable to the ulcer seen in man can be produced in animals by Mann's method of diverting the alkaline secretion of the duodenal loop into the terminal ileum. Once a chronic ulcer can be formed experimentally it is most interesting to study the conditions which promote healing and the manner of that healing.

The process of healing has been studied by Mann in experimentally produced ulcer and also by Caylor in resected specimens. They show that attempts at healing are constantly taking place: buds of granulation tissue are formed in the base of the ulcer and the margin of intact epithelium creeps out to cover it. Whether the ulcer is large or small, and whatever constitutes its base, healing depends on whether or not such granulation buds are developed. The fact that the long-standing ulcer often undergoes such fibrotic changes in its base that no granulation-tissue buds can be produced explains why such ulcers cannot heal. The chief factor in healing, therefore, is the formation in the base of the ulcer of a plug of granulation tissue with an epithelial layer of single flat cells growing out

Read before the Suffolk District Medical Society, Boston, Massachusetts, November 16, 1927.

†For record and address of author see This Week's Issue, page 311.

secondarily, from the margin of the lesion to cover the granulation tissue. The alternating character of the activities of ulcer of the stomach, if one may judge by the intermittency of the symptoms, may be due to the loss of this thin layer of tissue, by trauma or the destructive effect of digestive juices. Mann believes this and also believes that the disruption of these granulation buds explains the usual type of hemorrhage seen. Morton has shown by a series of experiments that the rapidity and the completeness of healing varies in different parts of the stomach. For instance, defects produced in the mucosa heal most rapidly along the greater curvature and most indolently on or near the lesser curvature. He has thus demonstrated experimentally one reason for the frequent incidence of chronic ulcers in the neighborhood of the lesser curvature of the stomach. Why there is such a high (over 90 per cent) incidence of ulcers along the lesser curve is conjectural but the fact that the lines of force and consequently the greatest trauma are along the lesser curve is not without significance.

Probably the most important factor in the inability of a mucosal erosion to heal is abnormal functioning. Sir James MacKenzie in his later writings emphasized very strongly the fact that most disease was, in the last analysis, dependent on the persistence of deviations from the normal functioning of a given organ. A clue to causation might be found in the incidence of ulcer, since it is a fact that ulcers of the duodenum are ten times as common as ulcers on the gastric side of the pylorus, and peptic ulcers in men are four times as common as in women. Although chronic gastric ulcer is a rare disease, acute mucosal erosions are exceedingly common. Robertson and Hargis have recently reported in a series of 2000 necropsies scars in 141.

Many of the phenomena of ulcer are easily understood, such as the mechanism of perforation, but others such as the cause of bleeding from peptic ulcer, the cause and the incidence of malignant degeneration of ulcers situated on the gastric side of the pylorus, and the almost unknown development of cancer in duodenal ulcer are unsettled problems. The cause of pain in peptic ulcer has been the basis of many elaborate studies and yet it has not been established whether it is due to muscle spasm from sensitization by acid, to intragastric tension or to direct irritation of nerve endings by acid. An ulcer which is confined to the mucosa produces no symptoms unless it is complicated by acute perforation or by bleeding.

Considering all these obscure phases of ulcer and its great chronicity, modern medicine has achieved a distinct triumph in controlling the disease in such a positive way. The first principle in the control of the disease is simplicity and safety. Since attempts at healing are normally taking place in every ulcer, it follows that

at all. It is, therefore, a principle generally agreed to that when ulcer is encountered in its early course, spontaneous healing should be afforded every opportunity and encouragement. This same principle of simplicity of treatment applies to the surgical management of ulcers which have resisted ordinary measures of treatment. The patient will, if he has the choice, elect a conservative operation which promises a reasonable prospect of cure rather than a mutilating operation which may give greater but not absolute assurance of cure. In other words, an operation of little risk which will insure partial abolition of symptoms and sufficient mitigation of disability is preferable to a radical and much more hazardous operation which promises greater relief of symptoms but may introduce an entirely new set of symptoms as disagreeable as those of the original ulcer.

The indications for treatment in duodenal ulcer and gastric ulcer differ just as markedly as the lesions themselves and their manifestations. The uncomplicated chronic duodenal ulcer may heal and not recur. The patient should be given full advantage of this possibility. A dietary regimen may enable the ulcer to heal in a short period of time, after which the patient may return to a normal diet without recurrence of symptoms. Just how frequently such results ensue is difficult to say, but it is probable that there are many mucosal erosions which set up so little disturbance in the neuromuscular function of the stomach and duodenum that a short period of relative rest enables the erosion to heal and heal permanently. In the majority of cases such treatment must be repeated and continued for an indefinite time, in many of these cases the treatment ultimately fails to abolish the symptoms and more radical measures must be resorted to. Just how long medical treatment for chronic duodenal ulcer should be persisted in depends on many factors: the willingness of the patient to adhere to a dietary regimen, the economic status, the degree of disability, the age of the patient, and the duration of the symptoms. All these thus become governing factors in determining the indications for operation. Although it is a hardship for patients to endure many years of repeated attacks, delay is apparently justified by the possibility that the ulcer may heal and by the probability that, as the ulcer becomes more and more chronic, it will lend itself more and more satisfactorily to surgical treatment.

In a similar way it is true that gastric erosions may and do heal. When such lesions have become chronic, surgical treatment should be advised unless it is distinctly contraindicated.

Of the complications of chronic peptic ulcer whether duodenal or gastric, hemorrhage is usually an indication for surgical interference, but operation should be avoided during the hemorrhage as Lund so emphatically pointed out in his paper on gastric hemorrhage. Acute perforation demands surgical measures in the early

hours if the patient's life is to be saved. Obstruction, although it may be temporarily relieved by a strict dietary regimen and gastric lavage, is almost certain to recur and demand surgical interference, and the development of malignant degeneration in gastric ulcer can be dealt with only by surgical means. As far as the dietary regimen for peptic ulcer is concerned, I shall not attempt to discuss it. One might point out the significant fact, however, that a great variety of diets have been suggested for the treatment of this disease. Anyone who becomes interested in the medical treatment of peptic ulcer sooner or later evolves some system of dietary management which differs in some way from the numerous other diets which have been suggested.

The indications for the various surgical methods which are employed for the control and cure of peptic ulcer are next to be considered.

POSTERIOR GASTRO-ENTEROSTOMY

The operation of first importance (because it is performed more frequently than any other operation for diseases of the stomach) is posterior gastro enterostomy. Its value is proved beyond any doubt since, in properly selected cases, not only is it capable of bringing about complete and permanent cure of symptoms but it has one advantage over all other types of operation for lesions of the stomach and duodenum, that is, it is nondestructive. If necessary, the anastomosis can be disconnected and the stomach restored to its original condition. It has no disadvantages which do not apply to other operations as well.

Posterior gastro enterostomy has its greatest value in the treatment of chronic duodenal ulcer associated with obstruction. In such cases the results are spectacular and the more marked the obstruction the greater the indication for gastro enterostomy. As Ryle has expressed this principle, "No attempt should be made to circumvent mechanically a lesion which is producing no considerable mechanical disturbance of function." The reverse of this is also true: the less evidence there is of interference with gastric motility or disturbed function the less is gastro-enterostomy called for and the less the assurance that it will give permanently satisfactory results. It is, however, frequently true that it is the only justifiable procedure in many cases in which no obstruction exists, that is, when the lesion in the duodenum is so situated that local excision with plastic operation on the pylorus is not feasible. The operation is also of great utility for duodenal ulcer in which hemorrhage has been a complication and direct attack on the ulcer cannot be carried out. In such cases the indirect procedure of gastro-enterostomy will insure a high degree of protection against further bleeding and in a large percentage of cases will relieve the other symptoms of ulcer.

Posterior gastro enterostomy is frequently

necessary in cases of gastric ulcer. The simplest principle in the surgical management of gastric ulcer is local excision of the lesion combined with gastro enterostomy. Inasmuch as many gastric ulcers are situated so far from the pylorus that resection of the stomach involves the sacrifice of a large part of the healthy stomach, the method of complete removal of the lesion, by local excision along with gastro enterostomy to protect against further ulceration and motor malfunction, should not be lightly abandoned for a more radical procedure. The value of gastro-enterostomy in correcting disturbed gastric function is illustrated in the management of gastric ulcer. Experience has shown that even if deformity does not follow removal of a small ulcer of the stomach by excision and the pylorus and duodenum are normal, such excision alone fails, in about 50 per cent of the cases, to afford permanent relief of disordered gastric function. The fact that the best results in these cases require the addition of gastro enterostomy to an operation which leaves in reality a normal appearing stomach, pylorus, and duodenum conclusively proves that in the stomach affected with ulcer gastro enterostomy brings about changes in the secretory, sensory, and motor functions which are essential to a good result. Another extraordinary fact about gastro enterostomy for gastric ulcer is that some of the large irremovable ulcers, particularly in the fundus of the stomach, are cured by gastro enterostomy alone. Although gastro-enterostomy alone should not be depended on if the ulcer can be removed, the definite curative value which it exhibits in those cases in which the lesion cannot be removed, shows that it exerts an effect on the functions of the stomach which frequently permits such lesions to heal.

ANTERIOR GASTRO ENTEROSTOMY

Anterior gastro enterostomy is an excellent substitute for posterior gastro enterostomy and all the advantages of the latter apply to the former. The value of anterior anastomosis has been overlooked during the last few years and its usefulness, if only as a substitute for posterior gastro enterostomy, is great. While it is occasionally true that malformations due to anatomic abnormalities or inflammatory reaction prevent posterior gastro enterostomy being satisfactorily carried out, it is extremely rare that anterior anastomosis cannot be performed. I usually add entero anastomosis to gastro enterostomy in the treatment of cancer but rarely in the treatment of ulcer. One of the definite advantages of the anterior anastomosis is that, when ulceration recurs at the anastomosis, it is more easily dealt with than when it develops at the site of a posterior anastomosis.

CAUTERY EXCISION

The simplest method by which the ulcer can be removed is by local excision, and for this the

secondarily, from the margin of the lesion to cover the granulation tissue. The alternating character of the activities of ulcer of the stomach, if one may judge by the intermittency of the symptoms, may be due to the loss of this thin layer of tissue, by trauma or the destructive effect of digestive juices. Mann believes this and also believes that the disruption of these granulation buds explains the usual type of hemorrhage seen. Morton has shown by a series of experiments that the rapidity and the completeness of healing varies in different parts of the stomach. For instance, defects produced in the mucosa heal most rapidly along the greater curvature and most indolently on or near the lesser curvature. He has thus demonstrated experimentally one reason for the frequent incidence of chronic ulcers in the neighborhood of the lesser curvature of the stomach. Why there is such a high (over 90 per cent) incidence of ulcers along the lesser curve is conjectural but the fact that the lines of force and consequently the greatest trauma are along the lesser curve is not without significance.

Probably the most important factor in the inability of a mucosal erosion to heal is abnormal functioning. Sir James MacKenzie in his later writings emphasized very strongly the fact that most disease was, in the last analysis, dependent on the persistence of deviations from the normal functioning of a given organ. A clue to causation might be found in the incidence of ulcer, since it is a fact that ulcers of the duodenum are ten times as common as ulcers on the gastric side of the pylorus, and peptic ulcers in men are four times as common as in women. Although chronic gastric ulcer is a rare disease, acute mucosal erosions are exceedingly common. Robertson and Haigis have recently reported in a series of 2000 necropsies scars in 141.

Many of the phenomena of ulcer are easily understood, such as the mechanism of perforation, but others such as the cause of bleeding from peptic ulcer, the cause and the incidence of malignant degeneration of ulcer situated on the gastric side of the pylorus, and the almost unknown development of cancer in duodenal ulcer are unsettled problems. The cause of pain in peptic ulcer has been the basis of many elaborate studies and yet it has not been established whether it is due to muscle spasm from sensitization by acid, to intragastric tension or to direct irritation of nerve endings by acid. An ulcer which is confined to the mucosa produces no symptoms unless it is complicated by acute perforation or by bleeding.

Considering all these obscure phases of ulcer and its great chronicity, modern medicine has achieved a distinct triumph in controlling the disease in such a positive way. The first principle in the control of the disease is simplicity and safety. Since attempts at healing are normally taking place in every ulcer, it follows that

at all. It is, therefore, a principle generally agreed to that when ulcer is encountered in its early course, spontaneous healing should be afforded every opportunity and encouragement. This same principle of simplicity of treatment applies to the surgical management of ulcers which have resisted ordinary measures of treatment. The patient will, if he has the choice, elect a conservative operation which promises a reasonable prospect of cure rather than a mutilating operation which may give greater but not absolute assurance of cure. In other words, an operation of little risk which will insure partial abolition of symptoms and sufficient mitigation of disability is preferable to a radical and much more hazardous operation which promises greater relief of symptoms but may introduce an entirely new set of symptoms as disagreeable as those of the original ulcer.

The indications for treatment in duodenal ulcer and gastric ulcer differ just as markedly as the lesions themselves and their manifestations. The uncomplicated chronic duodenal ulcer may heal and not recur. The patient should be given full advantage of this possibility. A dietary regimen may enable the ulcer to heal in a short period of time, after which the patient may return to a normal diet without recurrence of symptoms. Just how frequently such results ensue is difficult to say, but it is probable that there are many mucosal erosions which set up so little disturbance in the neuromuscular function of the stomach and duodenum that a short period of relative rest enables the erosion to heal and heal permanently. In the majority of cases such treatment must be repeated and continued for an indefinite time, in many of these cases the treatment ultimately fails to abolish the symptoms and more radical measures must be resorted to. Just how long medical treatment for chronic duodenal ulcer should be persisted in depends on many factors: the willingness of the patient to adhere to a dietary regimen, the economic status, the degree of disability, the age of the patient, and the duration of the symptoms. All these thus become governing factors in determining the indications for operation. Although it is a hardship for patients to endure many years of repeated attacks, delay is apparently justified by the possibility that the ulcer may heal and by the probability that, as the ulcer becomes more and more chronic, it will lend itself more and more satisfactorily to surgical treatment.

In a similar way it is true that gastric erosions may and do heal. When such lesions have become chronic, surgical treatment should be advised unless it is distinctly contraindicated.

Of the complications of chronic peptic ulcer whether duodenal or gastric, hemorrhage is usually an indication for surgical interference, but operation should be avoided during the hemorrhage as Lund so emphatically pointed out in his paper on gastric hemorrhage. Acute perforation demands surgical measures in the early

Billroth II and its modifications For gastric carcinoma I believe the latter type to be the more satisfactory. It insures wider excision of the growth and its regional lymph nodes, and if gastro-intestinal continuity is restored by anterior anastomosis between the stump of the stomach and the jejunum, the resection may, if necessary, include the entire stomach. A direct anastomosis between the end of the stomach and end of the duodenum is an excellent operation for small growths at the pylorus. The disease can be eradicated and anastomosis made without undue tension on the suture lines. The segmental or sleeve resection is essentially Billroth I in type.

The chief objection to the Billroth I type of resection in carcinoma is that if the disease recurs, it is likely to do so in the region of the anastomosis or in the tissues posterior to it. The resulting obstruction in some cases necessitates a secondary operation to insure relief.

Resection by the Billroth II methods, on the other hand, is rarely followed by any difficulty in the stomach. Recurrence, when it does take place, is usually in the liver or in some distant organ and the patient is seldom a victim of the distressing symptoms attending recurrence in the stomach. For this reason partial gastrectomy as a palliative operation for carcinoma of the stomach is rather frequently indicated; that is, when it is obvious that the disease cannot be cured, the patient can be protected against an unpleasant sequence of events if the growth is removed.

Partial gastrectomy for gastric ulcer is an excellent procedure and can be justifiably em-

ploved in a large percentage of cases. For example, partial gastrectomy was chosen for fifty-eight of the cases of gastric ulcer in which operation was performed in the Clinic during the last year. The chief indications for partial gastrectomy in cases of gastric ulcer are large size, deep crater, and extensive induration about the ulcer. The possibility of such lesions being malignant necessitates a clean cut removal of the lesion when possible and, although this can be done by local excision with knife or cautery, yet partial gastrectomy when the lesion is favorably situated involves little more risk and the results are excellent. I believe, however, that it is unnecessary in such cases to remove a large part of the stomach since this operation produces such a profound effect on the secretory function of the stomach as to be incompatible with good health. Partial gastrectomy is also indicated when other operations have failed to cure a chronic peptic ulcer. It is often preferable for gastrojejunal ulcer and for recurring ulcer in any situation after a well-accepted type of operation has failed to cure or control symptoms. Fortunately in such cases the risk of partial gastrectomy is not so great as to militate against its success as a secondary operation.

The attempt to establish partial gastrectomy as an operation for primary duodenal ulcer is a trend, I believe, in the wrong direction. Progress will more likely result from simplifying methods of treatment rather than from complicating them, particularly when they are undertaken for a lesion which does not become malignant and which is not in the stomach.

FEMORAL EMBLECTOMY*

BY ROBERT L. MASON, M.D., AND LEWIS M. HURATHAL, M.D.†

OCCCLUSION of a large peripheral artery of an extremity by an embolus, although not a common occurrence, is nevertheless a situation fraught with exceedingly grave potentialities. Untreated, the loss of the limb supplied by the occluded vessel is in most cases, inevitable. Thanks largely to the work of Kev¹ and other Scandinavian surgeons, the operation of emblectomy for removal of the occluding embolus has been placed on a sound basis.

It has been the history of most operative procedures that once evolved, their subsequent application and the resultant evaluation of their efficacy did not become possible until the indications and type of case for which the procedure was intended became well known. This communication is not a report of brilliant results, but rather is presented to call attention to the type of case which may be benefited by the operation of peripheral emblectomy and to emphasize its emergency nature.

Emboli causing gross peripheral occlusion arise from thrombus formation in the left heart, less commonly from the aorta or its great branches. Factors favoring thrombosis are stasis, infection or injury to the endothelium.

Stasis is probably the most frequent cause, associated with sluggish circulation in the recesses of the heart, particularly the auricles and their appendages. Mitral stenosis particularly with chronic fibrillation and dilated auricles, is probably the most frequent source of intracardiac thrombosis, but it may form in any dilated heart, especially in the presence of congestive heart failure.

Infection of the valves produces verrucous vegetations which are friable and easily detached. These may become large enough to occlude vessels as large as the iliac arteries.

Injury to the endothelium as in arteriosclerosis or lues, may be the cause of thrombosis formation. Infarction of the heart muscle with necrosis of the wall and endothelium may be followed by mural thrombi.

*From the Lacey Clinic.

†For records and addresses of authors see *This Week's Issue* page 311.

advantages of the cautery have been repeatedly demonstrated. It stands out prominently because of its ease of performance, and it is also based on sound premises, namely, the effect of heat on infected and malignant tissue. Inasmuch as it is now generally recognized that the best treatment for chronic gastric ulcer must include its radical removal, combined with some procedure to insure symptomatic relief and to prevent recurrence of the ulcer, it is fortunate that we have at hand such simple, safe, and effective measures as cautery excision and gastro-enterostomy, the combination of which has been attended by such satisfactory results. Compared with these procedures, partial gastrectomy is primarily at a serious disadvantage for the chances of mishap during its performance are too many to warrant adoption of the operation by any but surgeons of considerable experience.

PYLOROPLASTY

Pyloroplasty is occasionally preferable for chronic duodenal ulcer or chronic gastric ulcer when the lesion is in the pyloric end of the stomach. There are many methods of performing pyloroplasty, the most important of which are the Heineke-Mickulicz, Finney, C. H. Mayo, Judd and Horsley, but the operation, regardless of the type, has its limitations. The chief objection to pyloroplasty is the fact that in a considerable percentage of cases of duodenal ulcer there are multiple lesions. Careful examination of the duodenum when symptoms of ulcer have lasted for many years will often show multiple scars encircling the duodenum. Any type of operation which deals only partially with these lesions does not afford the same prospects of permanent relief of symptoms and of permanent healing as a procedure which permits healing to take place regardless of the extent or the multiplicity of the lesions. Another limitation concerns the situation of the ulcer and the mobilization of the duodenum, and successful pyloroplasty depends to a large extent on the success with which such mobilization can be carried out. On the other hand, pyloroplasty has certain advantages, one of which is that it may include a direct attack on the ulcer, a procedure of particular value in the bleeding type. Another is that should ulceration recur or contraction develop to the point of obstruction following pyloroplasty, a secondary operation, usually gastro-enterostomy, can be carried out without great difficulty. Pyloroplasty has its greatest value in the treatment of ulcers near the pylorus on the anterior wall of a duodenum which can be easily mobilized and in which there is not extensive inflammation about the ulcer.

GASTRODUODENOSTOMY

In selected cases gastroduodenostomy, that is, anastomosis between the stomach and the first part of the duodenum to circumvent the ob-

structed pylorus is a valuable procedure. Its particular indication is in cases complicated by marked obstruction in which gastro-enterostomy is contraindicated because of technical difficulties and the duodenum is large enough for a satisfactory opening to be made between the stomach and duodenum in front of the site of obstruction. The Kocher method of gastroduodenostomy, that is, between the pyloric end of the stomach and the second and third part of the duodenum, has been abandoned because of the inadequate drainage which it provides and the tendency for the opening to become still smaller.

PARTIAL DUODENECTOMY

Partial duodenectomy is chiefly employed for posterior ulcers of the duodenum, particularly of the bleeding type. If such ulcers can be separated from their posterior attachments, if they are of considerable size and not too far from the pylorus, the duodenum can be mobilized to a sufficient distance below the ulcer to permit direct approximation of the end of the stomach to the end of the duodenum after the segment of duodenum has been removed. While this procedure has limited indications, it is most valuable and is safe when it can be satisfactorily carried out.

JEJUNOSTOMY

Jejunostomy for lesions of the stomach and duodenum is occasionally of great value in cases of benign lesions so inaccessible that a radical operation is unwise because it involves the sacrifice of such a large part of the stomach, the duration may be so extensive that satisfactory gastro-enterostomy is impossible. Jejunostomy, providing as it does complete rest for the stomach, is a procedure to be kept always in mind. In some instances the operation has even brought about complete cure. If there is doubt whether or not the lesion is malignant, jejunostomy can be used as a method of preparation for a second operation later if the patient continues to improve but the lesion does not entirely heal or disappear. The operation is also occasionally of value as a factor of safety in extensive and difficult operations such as total gastrectomy. In these cases the jejunostomy tube permits adequate alimentation without menace to the suture lines.

PARTIAL GASTRECTOMY

Partial gastrectomy affords the only possible cure for gastric carcinoma. It is one of the most favored types of operation for chronic gastric ulcer and it is also indicated in recurring ulcers following operations. As a primary procedure for chronic duodenal ulcer the operation is, I believe, unwarranted and will never become an operation of choice.

There are two basic types of gastric resection—the Billroth I and its modifications, and the

oil, is then gently introduced into the arteriotomy opening and the interior flushed out with a 2 per cent sodium citrate solution in order that any remaining particles may be washed out. Sponges should be laid on either side of the artery as this is done, since according to Scandinavian observers, it is possible that sodium citrate in the soft tissues may delay healing. If it

slightly, in order that the endothelial lining of the vessel may be well approximated. This is best done by a continuous mattress suture for the first row, followed by an over and over stitch through the small flange thus created. Small leaking points may need reinforcement.

In favorable cases, pulsation can be felt in the popliteal artery at the close of the opera-

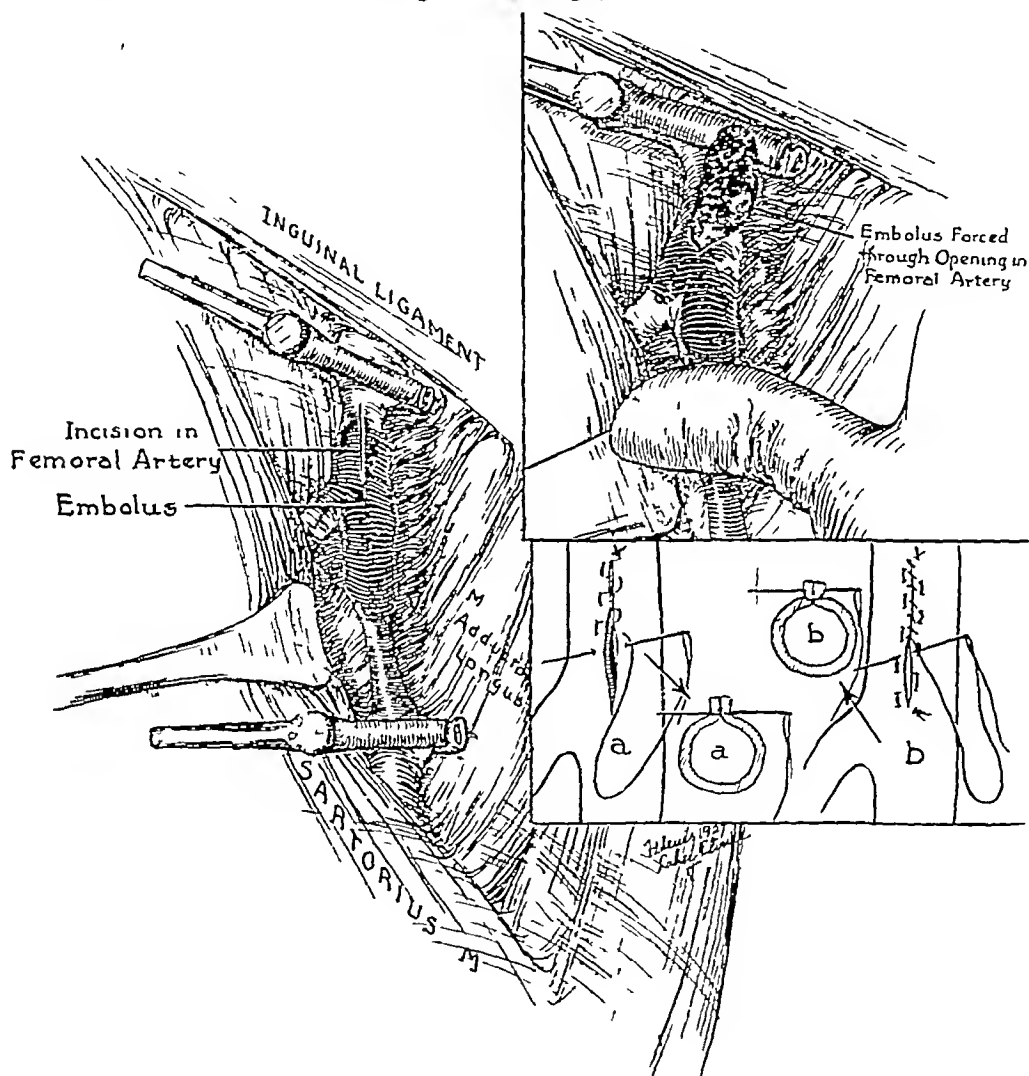


FIG 1 Steps in Embolectomy

is obvious that a portion of the embolus remains and cannot be dislodged by flushing with the sodium citrate solution, the arteriotomy opening is closed and another shorter, opening made just above the lower clamp. The upper artery clamp is then loosened enough for a brisk spurt of blood to wash out any remaining particles. This done, the clamp is again tightened and the lower arteriotomy incision closed. In closing the arteriotomy incision, we have used fine Japanese oiled silk with a short, fine (No 16) swedged needle. Two rows of sutures are taken, care being exercised that the first row everts the intima

tion together with a distinct increase in heat in the affected leg.

Following operation, the leg is generously wrapped in cotton and a bandage loosely applied. In bed, care is taken that the leg is kept warm and that the bed clothing does not rest on it. The patient if his general condition permits, should lie flat in bed in order that there be no impediment to the flow of blood through the femoral artery. The following day the leg should be elevated at intervals on the Berger board, and exposed to the ultraviolet rays in order that the circulation may be aided as much as possible.

One would assume that sudden changes in the hemodynamics of the cardiovascular system would be the most frequent cause of detachment of thrombi. Thus, however, is not borne out by clinical experience. It is impossible, in fact, to say in any one patient, in view of the numerous possibilities, what might cause the detachment of a clot. It is important, however, to determine, if possible, the source of the embolus and the underlying condition present, because this knowledge will determine, to a large extent, the prognosis and the operability of the patient when surgical measures are to be considered. However, no definite rule can be laid down, even when it is known that the ultimate prognosis is poor. In bacterial endocarditis, for example, removal of an embolus is justified, because this disease may go on for many months. We believe that every chance should be offered the patient and that this can only be decided at the bedside.

Small emboli, when set free in the blood stream, are usually swept into the smaller arterial branches supplying the spleen, or kidneys, giving rise to infarctions in these organs. Mesenteric thrombosis may occur. Larger emboli are swept downward toward the iliac vessels, less commonly upward into the axillary or carotids.

The most common point for the lodgment of a large embolus is at the bifurcation of a vessel, as at the bifurcation of the aorta, at the emergence of the profunda from the femoral, at the divergence of the subscapular and axillary, and in the popliteal. At the bifurcation, the embolus assumes the "rider" position, forming an inverted Y with each branch extending downward into the branches of the vessel.

Our experience has been limited to five cases, in all of which the occlusion occurred in the femoral artery at the point of emergence of the profunda from the main trunk of the vessel.

The signs and symptoms associated with the lodgment of an embolus have been so definite in our cases that the diagnosis was easily made. Attention is first called to the condition by the sudden onset of knife-like pain (in our cases of femoral occlusion) just above the knee. Attempts at flexion of the knee are accompanied by excruciating pain in the lower leg. On examination, the leg is distinctly less warm than its fellow, it may be cold if the occlusion has been of some hours' duration. The lower leg is wax-like in color. In all our cases there has been a mottled purplish area extending upward from the knee for about 3 inches. Pulsation is absent in the popliteal, dorsalis pedis and posterior tibial arteries. The femoral artery can be felt pulsating for a distance of about two fingers' breadth below Poupert's ligament. The pulsation is apt to appear stronger than on the opposite side, and there is a distinct sensation of a downward thrust. In three of our cases pressure just below the cessation of pulsation has elicited pain, a finding also remarked upon by Scan-

dnavian surgeons. A needle prick of a toe on the affected side bleeds scarcely at all.

Operation should be performed as soon as possible after the diagnosis is made. The changes in the tissues of the extremity distal to the occlusion incident to the cessation of circulation, the growth of the thrombus upward from propagation, thrombosis formation in the artery distal to the occlusion,—all demand the earliest possible restoration of the unobstructed arterial lumen.

The operation itself is not attended with great technical difficulties. It should be carefully planned, however, and provision made for the few special articles of equipment needed. These include rubber-covered vessel clamps, fine round pointed needles (No 14 or No 16) threaded with oiled silk, a small catheter, a syringe to fit the catheter, and a small quantity of sterile oil.

Local anaesthesia is the anaesthetic of choice. We have also used spinal anaesthesia with satisfaction. The artery is exposed by a longitudinal incision beginning about an inch above Poupert's ligament and extending downward for about five inches. The occluded artery when exposed presents a characteristic picture. Just above the occlusion the impeded current causes a downward thrust of the artery resembling that seen in a ligated vessel in an amputation stump. The embolus in our cases has had its upper end almost a centimeter above the emergence of the profunda. The vessel is distinctly narrowed just below this point for the length of the embolus, and has a peculiar cordlike consistency. Great care must be taken in the further exposure of the artery that the manipulation does not dislodge the embolus. In one of our cases this happened. After gently freeing the artery above and below the occlusion, one rubber covered clamp is applied as high above the embolus as exposure will permit, and another about 3 cm distal to the lower end of the embolus. An incision about 1 cm in length is now made in the artery, beginning a short distance above the embolus. The upper end of the embolus now presents itself in the arteriotomy opening. With a thumb on the artery just above the lower clamp, gentle pressure upward is exerted and by a "milking" process the embolus is extruded. By this procedure the embolus may be recovered intact, together with the portion which extended down the profunda femoris. We have had much better success with this method than by trying to pull out the clot with the forceps, which usually results in morcellation and in tearing off the profunda portion. Bleeding from the profunda may occur after the embolus has been extruded, and a rubber covered artery clamp should be applied to this vessel. It is not wise to attempt to apply this clamp earlier, since this branch is given off so abruptly and extends so deeply into the muscle that a clamp would probably impinge upon the embolus.

A number ten catheter, having been dipped in

His pupils are equal regular and pinpoint in size. They do not react to light. The ears, nose and throat are negative. The lips are moderately cyanotic. There are no cervical pulsations, stiffness or adenopathy. The chest is that of a large well developed man. The lungs have good expansion and resonance, normal breath sounds and a moderate number of medium crepitant rales at the bases.

The Heart. Inspection and palpation of the precordium disclose no pulsations, impulses or thrills. Percussion reveals no enlargement in any diameter; the left border of dullness being well within the nipple line, the right border of dullness within the right

cold and clammy. There are no edema or scars. The reflexes are normal.

The blood pressure is 66/40, temperature 96.4°, pulse 110 and respiration 23.

The clinical diagnosis was heart failure probably consequent to coronary thrombosis. The patient did not respond to treatment, and died three hours after admission, conscious to the end. Laboratory data was not obtained on account of his rapid exit.

NECROPSY

The body is that of a well developed, well nourished elderly white male. There is no edema.



FIGURE 1. The arrow leads from the aortic aneurysm through the perforation, and into the pulmonary artery. Below the perforation lie the relatively smooth pulmonary artery, two cusps of the pulmonary valve, and the right ventricle.

lateral sternal line and supracardiac dullness normal. Auscultation reveals a regular rhythm except for infrequent extrasystoles. The rate is 110 and the sounds of very weak quality. The pulmonic second sound is loud and accentuated. All over the precordium, loudest at the pulmonic area and transmitted into the axilla, is a moderately loud harsh systolic bruit. No diastolic murmur is heard.

Across the epigastrium and right upper quadrant are a sense of resistance to palpation and dullness to percussion. This area is moderately tender. The spleen and kidneys are not palpable.

The pulse is barely palpable. The peripheral vessels are not palpably sclerosed. The extremities are

Peritoneal Cavity—Negative

Pleural Cavities. Each contains about 100 cc of clear thin straw-colored fluid.

Pericardial Cavity. It contains about 100 cc of blood-tinged watery fluid. The surface of the left ventricle is smooth. A fibrous patch with adhering fibrous tags roughens the anterior surface of the right ventricle. The right auricle is densely adherent to the aorta by fibrous adhesions and scar tissue.

Heart. The heart weighs 350 gms. It is normal in size and position. The right side is moderately distended with blood. The epicardium is smooth and glistening except in a small patch on the anterior surface of the right ventricle and on the posterior

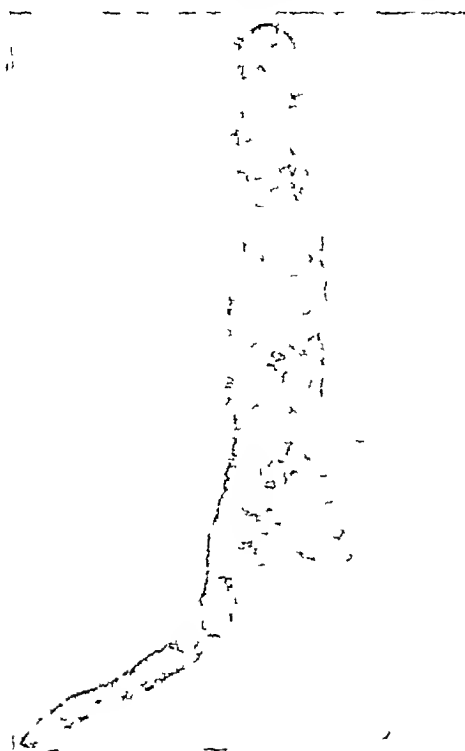


FIG 2 Embolus removed from right femoral artery 23 hours after lodgment

As stated previously, we have had five cases of femoral occlusion. One case was bilateral. In

one patient, just after the occurrence of the embolus, the affected leg was vigorously massaged by a wardmate and the embolus apparently dislodged, since pulsation was reestablished after this maneuver. After some weeks, during which gangrene threatened at intervals, recovery took place. In the next three cases, which were operated upon, subsequent emboli caused death before time enough had elapsed to show whether the affected leg would be saved. In the last case, from which the embolus shown was taken, operation was not done until 28 hours had elapsed following the occurrence of the embolus. Although pulsation could be felt in the popliteal artery after removal of the embolus, gangrene occurred and amputation became necessary. Examination of the amputated leg showed numerous areas of thrombosis below the site of obstruction, due, undoubtedly, to the long delay in operative interference. Autopsy was permitted in one of the cases who died. This was the case in which the embolus had occurred on both sides. The main channel of the artery was clear on both sides, although there was a fragment of embolus in the profunda on one side.

While the results in this small group of cases are disappointing, we believe the operation is justified in that when performed under local anesthesia it possesses no marked risk and may be the means of saving a limb in which amputation would otherwise be inevitable.

REFERENCE

1 Key Surg Gyn and Obst 1923 Vol XXXVI 309

AORTIC ANEURYSM RUPTURING INTO THE PULMONARY ARTERY. REPORT OF A CASE*

BY CHARLES KORB, M.D., AND DAVID AYMAN, M.D.†

PERFORATION into the pulmonary artery is an uncommon situation for the rupture of an aortic aneurysm. Stevenson¹ found only three cases in a series of thirty-nine hundred autopsies. Lemann² collected five hundred and ninety-two cases of ruptured aortic aneurysms, only eighteen of which had perforated into the pulmonary artery. Boyd³ reports only forty-five such cases in a total of eleven hundred and ninety-seven ruptures, many of which are probably included in Lemann's series. The report of this pathologico-anatomical rarity appears warranted.

CASE REPORT

Hosp No 542051 W W 53 a white married sales man, was admitted June 25 1927 on the medical service of Dr R C Larrabee complaining of severe weakness of ten hours duration. The customary detailed history was not obtained because of his condition.

Marital History—Negative

From the First Medical Service of the Boston City Hospital.
†For records and addresses of authors see "This Week's Issue" page 511.

Habits

He is a moderate consumer of alcohol.

Past History

He had a Neisser infection twenty-five years ago. He does not know whether he had lues.

Two years ago he had severe headaches which a physician attributed to a hypertension of one-hundred and ninety. Dietetic treatment improved his headaches and hypertension.

Present Illness

While carrying a heavy suitcase up two flights of stairs he was suddenly seized with extreme weakness, dyspnea and epigastric pain. He took a taxi home, summoned a physician and went to bed. His weakness and epigastric pain persisted, his hands became cold and clammy and he became nauseated. He also commenced to have pain in his left arm and hand which he attributes to carrying the suitcase. His physician administered an hypodermic injection and advised hospitalization.

Physical Examination

The patient is a well-developed and well-nourished middle-aged man lying in bed with an expression of anxiety and intense pain. He appears moribund. He has moderate cyanosis, slight dyspnea but no orthopnea.

HISTORY

Verv meagre details were found in most of the books on surgery and in American literature. It remained for Colp⁴ in 1925 to write a verv illuminating article which covers the subject very thoroughly. A great deal of the material in this short paper has been taken from his article. In America, Brewer¹, Erdman², and Senn³ have reported cases of dermoid cysts of the floor of the mouth, and verv recently Cameron and Boyko⁵ described a case.

LOCATION

Dermoid cysts occur in very varied parts of the body. They have been reported as having been found in the following regions—orbit, cornea, conjunctiva, brain, frontal sinus, parietal bone, anterior wall of the rectum, pelvic connective tissue, pancreas, nose, terminal phalanx of the thumb, sacro-coccygeal region, mesentery, umbilicus, vaginal canal, round ligament, wall of the Fallopian tube, ovary, scrotum, perineum, neck, ears, sternum, pleural cavity and floor of the mouth.

EMBRYOLOGY⁶

Dermoid cysts above the floor of the mouth and just beneath the floor of the mouth may arise from epithelial inclusions which come theoretically from the following possible points: (1) the narrow region before, in and behind the median portion of the lower jaw (where the mandible unites), (2) the median portion of the hyoid bone where both halves of the second and third branchial arches grow together, (3) the region between the lower jaw and the hyoid in the middle line or just to one side where the first and second branchial arches grow together, (4) the region below the cornua of the hyoid bone where the second and third branchial arches grow together. Most of them are probably derived from ectoderm shut in during the closure of the first and second branchial arches.

HISTOLOGY AND PATHOLOGY

Histologically the walls of the cyst should show tissue resembling that of skin. That is, the cyst should contain hair and the walls show hair follicles and sweat and sebaceous glands. But Colp points out that just as true skin may in places be free from the usual appendages, so the walls of a dermoid cyst may also be lacking. Grossly the walls externally are yellowish-white, thick, tough, fibrous, and shaggy. Inside, they are smooth and shiny and the contents of the cyst may vary from a yellowish, soupy material to thick, white, greasy, caseous matter.

ANATOMY

The mylohyoid muscle is the diaphragm separating the inside of the mouth from the neck.

It is a hammock-like muscle with a median raphe. Along the surface of it, near the raphe, run the two geniohyoid muscles, which fan out to be attached to the hyoid bone posteriorly and below. Dermoid cysts above the floor of the mouth rest beneath the sublingual gland and upon the mylohyoid and against the centrally located geniohyoids, while dermoid cysts beneath the floor of the mouth are medial to and behind the submaxillary gland and extend to the hyoid bone and rest against the geniohyoid, the mylohyoid and the anterior belly of the digastric. The cysts above the diaphragm of the mouth, are, of course, in close proximity to Wharton's duct and the lingual nerve, and those beneath the floor of the mouth are in close relation to the hypoglossal nerve, lingual vein and artery and facial artery.

The cysts may be divided into median cysts and lateral cysts. The median cysts may be further divided into "the geniohyoid cysts, those resting upon the mylohyoid muscle and spreading the floor of the geniohyoid muscles apart, and the genioglossal cysts, those resting upon the geniohyoid muscles and pushing the genioglossi apart." The lateral tumors occupy "the region above the mylohyoid, beneath the mucous membrane of the mouth."

DIAGNOSIS

The tumors of the floor of the mouth are seen as swellings under the tongue and push downward into the submental region. While ranulae are usually laterally placed the tumors lie nearly in the midline and the sublingual gland on one side or the other is pushed up closer to the underneath part of the tongue. In the case reported here, the swelling under the chin was mistaken many times for a very peculiar double chin. (This should have ruled out sublingual ranula which does not project below the jaw.) Physicians had remarked about the double chin but no one considered the presence of a cyst. The tumor caused pressure on Wharton's duct and one of the patient's chief complaints was swelling in the side of the neck during eating or after seeing tomatoes, lemons and the foods that caused salivation. It was this occasional swelling that caused the patient to consult a physician. The appearance underneath the tongue is yellowish white rather than bluish as in ranulae. Cysts beneath the floor of the mouth cause a swelling from the angle of the jaw towards the hyoid bone. A suppurating gland from a tooth might be suspected, or a cyst of the submaxillary gland. A submaxillary ranula usually bulges into the floor of the mouth and also projects below the jaw. If there is doubt, an exploratory puncture with the discovery of the characteristic sebaceous material should at once suggest the diagnosis.

In the differential diagnosis of these cysts,

surface of the right atrium. The capillaries in the epicardium are injected. There is a moderate amount of fat along the coronary arteries which are sclerosed, but not calcified or occluded. The myocardium is pale reddish brown, glistening, smooth, homogeneous and firm. Multiple sections reveal no fibrosis. Small yellow areas 2.3 mm in diameter, resembling fat, lie beneath the endocardium of the left ventricle. The papillary muscles are fibrosed at the apices, and the chordae tendinae slightly thickened. The endocardium is negative. The tricuspid and pulmonary valves are negative. The mitral valve is moderately sclerosed, but not calcified. The aortic valve is thickened and sclerosed. The PULMONARY ARTERY is smooth, glistening, and of normal elasticity. There are a few yellow streaks beneath the intima, running longitudinally. The left pulmonary artery is perforated 8 cm from the margin of the pulmonary valve, or about 1 cm distal to the bifurcation of the right and left pulmonary arteries. The opening is 0.8 cm in diameter surrounded by a rough, irregular, red granular margin. The AORTA just distal to the aortic valve the ascending portion of the aorta is unevenly dilated into three large sacculations. Externally they are rough and covered with shaggy fibrous adhesions, while internally the wall is uneven, puckered, and scarred with many smooth, yellowish white non-calcified elevations. Where the wall is dilated, the normal intimal layer is replaced by roughened scar tissue covered by firm pink, friable ante mortem clots. The thickness varies from 0.4 cm to less than 0.1 cm and there is a perforation through one of these thin areas leading directly into the left pulmonary artery. The perforation is just at the margin of an adherent blood clot. The remaining portion of the aorta is scarred, uneven, and firmly adherent to the adjacent tissues. The measurements are—tricuspid 13.0 cm pulmonary 9.0 cm mitral 10.0 cm, aortic 9.0 cm left ventricle 1.6 cm, and right ventricle 0.3 cm.

Lungs. The apices are pale, the remaining portions, congested with blood, are red and blood exudes from all the larger vessels.

The Liver weighs 1670 gms and is normal in size and position. The surfaces are smooth with round edges. A single scar 6.0x3 cm, runs across the anterior surface of the right lobe and extends 0.4 cm into the substance of the liver. There are three small puckered areas on the under surface of the same lobe. On the under surface of the left lobe is a yellow firm scar 2 cm in diameter and depressed 0.2 cm below the surface. Innumerable minute, hairlike white lines run out from the margins of this in the capsule, and these are interrupted by minute glistening, gray, pinhead elevations. The liver is reddish brown and rather soft and flabby. The fresh surface of the liver is homogeneous brown and finely stippled. White fibrous lines radiate out into the parenchyma from these scars. There are two areas in the parenchyma 4 cm in diameter red in contrast to the surrounding brown parenchyma and characterized by a central point and radiating lines running out in all directions.

The Kidneys weigh 350 gms and are normal in size, shape and position. The capsules of the kidneys strip with difficulty from red granular snr

faces. The fresh surfaces show a diminution of kidney parenchyma, a narrow fibrous cortex, narrow calyces, and an absolute and relative increase in peripelvic fat.

Brain. The arteries at the base of the brain are mildly sclerosed.

The remainder of the necropsy was entirely negative.

ANATOMIC DIAGNOSES.—Aneurysms of the aorta with perforation of the left pulmonary artery, pulmonary edema, hydrothorax, syphilis of the liver, chronic vascular nephritis, syphilitic aortitis and generalized arteriosclerosis, healed pericarditis.

The microscopic sections completely confirmed the gross anatomic diagnoses. The aorta disclosed the classical picture of a luetic process.

COMMENT

The symptoms and signs of aortic aneurysm rupturing into the pulmonary artery have been discussed by Taylor⁴, Kappis⁵, and more recently Scott⁶. Though rupture of an aortic aneurysm is usually immediately fatal, perforation into the pulmonary artery very frequently is not. A period of weeks, months, or even a year may elapse before death ensues. The onset is always abrupt, and frequently follows exertion. The symptoms are those of acute heart failure. Angina pectoris of the most typical character and distribution may be present.

When we consider that the rupture into the pulmonary artery creates an arterio-venous aneurysm, then the physical signs are easily deduced and interpreted. The most characteristic though by no means constant physical sign is a continuous, roaring murmur with a systolic intensification, heard loudest over the pulmonary area and transmitted all over the precordium. Various writers have described it as vibratory, gushing, rasping, machinery-like, etc. This murmur in many cases only has a systolic phase. Accompanying this murmur a systolic thrill is often palpable. In the majority of cases the second pulmonary sound is greatly accentuated. Given the above signs and symptoms, an opportunity to study the case carefully, and evidence to rule out congenital heart disease, the diagnosis is not difficult.

We wish to express our thanks to Dr. R. C. Larabee, Chief of the First Medical Service, for permission to publish this case. We also wish to thank Drs. F. B. Mallory and H. E. MacMahon for their careful pathological study of the case.

BIBLIOGRAPHY

- 1 H. N. Stevenson, Johns Hopkins Bull. 24: 217, 1913.
- 2 I. I. Lemann, Am. Jour. Med. Sci. 152: 210, 1916.
- 3 L. J. Boyd, Am. Jour. Med. Sci. 163: 654, 663, 1924.
- 4 J. Taylor, Guy's Hosp. Rep. 42: 391, 426, 1883, 1884.
- 5 M. Kappis, Deutsch. Arch. f. klin. Med. 80: 506, 1907.
- 6 R. W. Scott, Jour. Am. Med. Assn. 82: 1417, 1924.

DERMOID CYSTS ABOVE AND BELOW THE DIAPHRAGM OF THE MOUTH

BY JOE VINCENT MEIGS, M.D., F.A.C.S.*

INTRODUCTION

THE finding of two dermoid cysts, one above the mylohyoid muscle and one below it, during one month, led to a search into the literature.

*For record and address of author see "This Week's Issue."

upon the subject and a consideration of the location of dermoids in general. Both cases reported here were originally suspected to be ranulae, although the possibility of a dermoid cyst was considered in the differential diagnosis of the second case.

and midline above the hvoid bone This tumor was also shelled out easily using the gloved finger as a blunt dissector The submaxillary gland although larger than normal was not removed A wick was placed in the bottom of the cavity and the skin approximated This tumor was nearly identical with the first one in size shape and appearance The patient made an easy convalescence and is now perfectly well again The submaxillary gland recovered its normal size very rapidly

The pathologic report of Dr Lawrence W Smith from the Pathological Laboratory at the Deaconess Hospital follows

Specimen consists of a portion of tissue which is well encapsulated and weighs 32 gms It measures $6\frac{1}{2}$ by $4\frac{1}{2}$ by $2\frac{1}{2}$ cm It is covered by a connective tissue capsule is soft on palpation and on section the center is composed of a brownish soft rather oily material On approaching the capsule the color of this material becomes white There are seen three or four hairs growing in from the capsule There is no definite pedicle seen

Section microscopically presents a typical cyst wall lined with epithelium on one side and connective tissue on the other Diagnosis Lingual cyst

REFERENCES

- 1 Brewer Ann Surg 1903 xxxvii 46
- 2 Erdman Ann Surg 1903 xxxvii 97
- 3 Senn J A M A 1884 lvi 187
- 4 Colp Surg Gyn and Obst 1925 xl 153
- 5 Cameron and Boyko J A M A 1927 xxxix 1149
- 6 Die Krankheiten Des Mundes von Well J von Mikulicz Radetzky und W Kummel Jena 1909

UNITED STATES PUBLIC HEALTH SERVICE

CHRONOLOGICAL LIST OF CHANGES OF DUTIES AND STATIONS OF COMMISSIONED AND OTHER OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

MARCH 14 1928

Assistant Surgeon H. L. Skinner Directed to proceed from Savannah Ga to Washington D C and return to accompany patient to St. Elizabeth's Hospital March 6 1928

Surgeon Lawrence Kolb Directed to proceed from Washington D C to New York City and Thielles N Y., and return in connection with studies being made in medical hygiene March 7 1928

A. A. Surgeon George Eugene Relieved from duty at Ellis Island N Y and assigned to duty at Charlestown Navy Yard Boston Mass effective March 15 March 7 1928

Assistant Surgeon General W. F. Draper Directed to proceed from Washington D C to Gibbs Tenn and such points in the States of Tennessee Mississippi Alabama Missouri Arkansas and Louisiana as may be necessary for the purpose of conferring with representatives of the Rockefeller Foundation and State and County Health officials in the Flood Area, and for the supervision and inspection of the Mississippi Flood Activities March 8 1928

Surgeon Grover A. Kempf Directed to proceed from Washington D C to Hagerstown, Md and return in connection with field investigations in child hygiene carried on at that station. March 8 1928

Assistant Surgeon General Thomas Farran Jr Directed to proceed from Washington D C to New York, N Y and return in connection with venereal disease control measures March 9 1928

Senior Pharmacologist M. I. Smith Directed to proceed from Washington D C., to Ann Arbor Mich

igan and return for the purpose of attending the meetings of the Federation of Biological Societies to be held in that city April 12-14 March 10 1928

Assistant Surgeon General W. F. Draper Directed to proceed from Washington D C to Chicago Ill., and return on or about March 28 for the purpose of attending the Second Conference on Public Health, to be held at the Headquarters of the American Medical Association March 10 1928

Surgeon L. L. Williams Jr Directed to proceed from Richmond Va to Jacksonville Fla and return for the purpose of attending the meeting of the Florida Anti Mosquito Association on March 29 March 12 1928

Epidemiologist T. H. D. Griffiths Directed to proceed from Biloxi, Miss to Jacksonville Fla, and return for the purpose of attending the meeting of the Florida Anti Mosquito Association on March 29 March 12 1928

Surgeon H. F. White Directed to proceed from Baltimore Md to Washington D C and return for conference at the Bureau relative to quarantine matters March 12 1928

Surgeon L. L. Williams Jr Directed to proceed from Richmond Va to Washington D C., for conference at the Bureau regarding malaria investigations and thence to Bristol Penna, in connection with field investigations of malaria March 13 1928

P. A. Dental Surgeon (R) A. E. Nannestad Relieved from duty at New York N Y and assigned to duty at Dental Relief Station Washington, D C March 13 1928

BOARDS CONVENED

Board convened at New London Conn at call of chairman for the purpose of determining the physical eligibility of certain candidates for temporary commissions in the Coast Guard

Detail for the Board

A. A. Surgeon H. A. Tyler
A. A. Surgeon H. R. Collins
Official

C. C. PIERCE, Acting Surgeon General

DR. EDWARD HICKS HUME APPOINTED TO HEAD POST-GRADUATE MEDICAL SCHOOL OF YALE IN CHINA

Dr. E. H. Hume formerly President of Yale in China has been appointed to the new position of director of the Post-Graduate Medical School and Hospital of that institution.

Under the new organization the Dean of the Medical School the Superintendent of the hospital and the Principal of the School of Nursing will all be responsible to Dr. Hume

Dr. Hume has been at work making plans for more effective administration of the institution for some months

He was born in 1876 graduated from Yale and studied medicine in Johns Hopkins He was formerly with the United States P. H. Service

He was the founder and organizer of the Medical College which is a department of Yale in China

ranulae must be considered as of most frequent occurrence, but puncture and bearing in mind the usual position of the sublingual and submaxillary ranulae should give a definite clue. Lipomata (Keen) are usually pedunculated and appear in the dorsum or edge of the tongue. Fibromata (Keen) are usually pedunculated, occasionally sessile, but a deep-seated growth may be impossible to recognize. Angiomata nearly always reach the surface and are identical with cutaneous angiomata. Circoid aneurysm is occasionally met with, but its humming pulsation should rule it out at once. Chondroma and osteoma are rare. Aberrant goitre of the suprahyoid or lingual type might be confusing. The suprahyoid type is centrally located, forcing apart the mylohyoid and the geniohyoid muscles. The lingual type is situated under the mucous membrane at the base of the tongue. These two forms of aberrant goitre must be differentiated from the lingual dermoid, or dermoid beneath the floor of the mouth, and the dermoid of the floor of the mouth. The goitres are always situated in the midline, a point of considerable importance. The lingual dermoid is never exactly in the midline. Lymphoma must of course be considered in the differential diagnosis. Adenoma and papilloma of the tongue are easily ruled out, as the former is in the body of the tongue itself and the latter usually of or attached to the tongue proper.

TREATMENT

The treatment of both types of dermoid cyst is surgical, that is, complete excision. Those on top of the diaphragm are best removed under local anesthesia, through an incision in the floor of the mouth. The sublingual gland is turned medially and the tumor shelled out of its bed with the finger. If there has been no suppuration, this is easily done. The lingual dermoid or more descriptive, the dermoid beneath the diaphragm of the mouth, can be reached by an incision below and parallel to the ramus of the jaw. The submaxillary gland is then pulled laterally and with the finger the cyst is shelled out of its bed as it lies against the mylohyoid and geniohyoid muscles.

REPORT OF TWO CASES

(1) A girl of twenty-four unmarried had had a "double chin" ever since she could remember and for three years had had a swelling under the right ramus of the mandible when eating or looking at anything that might cause salivation. In March 1927 her doctor, suspecting the tumor to be a ranula, opened the floor of the mouth under local anesthesia. He obtained glary mucous and packed the opening. This incision probably went into the body of the sublingual gland and therefore the drainage kept up for some time. Finally the wound healed leaving the patient just as before the operation. On examination a definite cystic area could be felt in the floor of the mouth with a small nodule of gland above separated from the main cyst. A diagnosis of ranula of part of the sublingual gland was made. No notice was taken of

the double chin and the patient did not complain of it because she had always had it.

At operation June 8 1927 under local anesthesia, the floor of the mouth was opened and the sublingual gland exposed. This did not seem to account for all the swelling in the mouth and so it was lifted medially and beneath, the thick, yellow fibrous wall of a larger tumor was found. This was dislocated with the gloved finger and easily removed. The tumor was about the size of an egg and quite heavy. A wick was placed in the large cavity and the wound closed. The patient made a very uneventful recovery and the first thing she noticed was the absence of her "double chin." The improvement was quite extraordinary. However the cyst or swelling beneath the right mandible continued when eating or seeing food that caused active salivation. This was probably due to injury of Wharton's duct from the submaxillary gland caused by pressure of the dermoid because of its position in the floor of the mouth. The patient is much relieved and has been advised to wait before deciding upon removal of the submaxillary gland, as release of the pressure may gradually diminish the size of the apparent submaxillary cyst or ranula.

The pathologic report of Dr. Tracy B. Mallory from the Pathological Laboratory of the Massachusetts General Hospital follows:

'Specimen consists of an unruptured cyst 6 by 4 by 3½ cm. It has a thin but densely fibrous wall and is entirely filled with homogeneous caseous material. No hairs are present. There is also a small piece of salivary gland tissue showing hemorrhage and necrosis.'

Microscopic examination shows a fibrous cyst wall lined with stratified squamous epithelium. The salivary gland shows a small area of hemorrhage infiltration with numerous lymphocytes and plasma cells and also numerous foreign body giant cells many of which enclose drops and strings of mucus. Diagnoses: Dermoid cyst. Chronic inflammation of the salivary gland.'

(2) A man thirty-five years old, had had a swelling at the angle of the left jaw for one and a half years. The tumor seemed about the size of an egg



Photograph of dermoid cyst removed from Case 2

and bulged slightly into the floor of the left side of the mouth. A diagnosis of ranula of the left submaxillary gland was made, but because of the previous case a dermoid cyst was considered in the differential diagnosis. On June 23, 1927 under a general anesthetic an incision was made parallel to the left jaw and the submaxillary gland exposed. No cyst of this gland could be found and so it was displaced laterally, when the same sort of cyst wall appeared as in the other case. It ran toward the pharynx

of the gland, atrophy to fibrosis. This is the so-called burnt out gland seen in hypothyroidism.

C THE ADENOMATA FALL INTO TWO GROUPS

1 Diffuse colloid adenomata

Probably originating in long standing goitre, presenting in appearance multiple small encapsulated tumors, well differentiated and which resemble the normal thyroid or colloid goitre except they have no lobulations. This condition is not of much interest to the clinician.

2 The foetal adenomata or the second type is the more serious and therefore of the more interest to the clinician. This type is circumscribed with well encapsulated masses of thyroid tissue presenting various degrees of differentiation from the pure foetal or resting cells to the pure colloid. They are named foetal because the foetal, or resting cells predominate. May occur at any age, in one or both lobes, however are seen more in the right. They present a rounded perhaps cystic swelling of considerable size and when present since youth, even if there are no symptoms, other than those of obstruction should be considered foetal, and especially dangerous, especially if there is a history of recent enlargement.

It has been stated that 90% of carcinomata arise from the foetal adenomata. Although this is probably altogether too high, still they do occur frequently, and here we get all the variations in the usual signs of malignancy, from the transitions of an innocent foetal adenoma through the pre-cancerous stage to the definitely well marked malignancy with the involvement of the capsule and metastasis.

D NEOPLASMS

Do occur and many arise from the foetal adenomata.

We have now studied the progressive and regressive changes in the normal thyroid gland, and have learned the differentiation of the adenomata, we must bear in mind that the given gland may contain normal thyroid tissue colloid, tumors of either kind in the various stages of differentiation, also that the iodine content is in inverse proportion to the progression and direct proportion to the involution, we can now think clinically, understanding anatomically and able to consider a case intelligently and treat it on sound reasoning and principles.

We all know that goitre is endemic and that it is closely associated with a deficiency in the iodine intake. Hence, we all can see that a gland that is so vitally concerned with metabolic function, dependent upon a fixed iodine content, may undergo certain parenchymatous changes in an effort to do a fixed amount of work with less material with which to work.

But how shall we explain the oftentimes sudden, unrestrained, fulminating and even malignant change, clinically or pathologically, which occurs from so many causes—exhaustion, recent

infections, shock, or any prolonged strain, worry, etc., in short what brings on that alarming and terrible disease, exophthalmic goitre? It is that some balance is upset and the thyroid wildly manufactures and discharges into the system a greatly increased amount of its active principle, identified by Kendall for us as Thyroxin. But how does it come about? Is it a loss of restraint, usually controlled by other factors, or is it over-stimulation? I fancy the former opinion and believe that the interrelationship of the adrenal and thyroid will some day be solved and that it will perhaps explain the unbalancing. Close observation and a thorough understanding by all, and the general practitioner here plays an important part because he observes the patient all through the disease, sees the effects of different treatments and notes the end results. For example, it has been observed that a patient will get along finely for years following a subtotal thyroidectomy, and be pronounced a cure, when some unusual strain comes along and the symptoms return.

BALANCED GOITRE

As before stated we may have a balanced goitre clinically, indicating that whether small or large, tumorous or non-tumorous, in whatever stage, there exists function within the normal limits.

1 Adolescent

The first under this classification would be the pure hypertrophic gland, moderately enlarged and firm, without pulsation and without symptoms other than those referable to subjective swelling felt particularly at the menses. Tumors may or may not be present.

2 Colloid

This type results from involution of the hyperplastic or hypertrophic changes and presents the same picture as above only that it may be much larger and softer. This gland may occur any time in the life of the goitre.

3 Adenomata

Appearance of this type is characteristic—irregularly lobular or nodular, asymmetrical, cystic or rounded or firm. Its only symptoms are usually those of pressure and distortion. In cases indicating upper mediastinal pressure, keep in mind the substernal type.

UNBALANCED GOITRE

Hypothyroidism

Of this type we have two forms recognized clinically, one associated with

A Pure hyperplasia, with or without tumors, having the characteristic symptoms and signs in the various degrees of severity of the so-called exophthalmic goitre. This gland may be large or small, usually uniform and symmetrically enlarged, usually without the tumor, and giving sense of active hyperemia, even to the point of pulsation with a thrill palpable at any of the

VERMONT STATE MEDICAL SOCIETY

GOITRE IN GENERAL PRACTICE*

BY F. J. LAWLISS, M.D.†

Mr. President and Gentlemen

I AM very grateful and appreciative of the invitation to present to you at this time some of the problems concerning goitre.

As some of you may remember, Dr. Eberts of Montreal addressed this meeting three years ago on this same question, but more especially from the surgeon's point of view. I shall endeavor to discuss it from the viewpoint of the general practitioner.

I chose this subject because it is an important one to us here in Vermont. It is a problem we all have to meet with daily, one that is of ever increasing importance, both socially and economically, and one that seems to grow, both in spite of and because of vigorous research.

I address myself to the general practitioner because the majority of us in Vermont, and probably the majority of those present here today fall into that class, chiefly because the general practitioner is the most important figure in the field of goitre. It is he that should supervise the preventive treatment, he who is the first consulted by the patient, and he who advises and follows up the treatment, whether it be medical or surgical. Unlike the surgeon, whose responsibility seemingly and naturally ceases when the patient leaves the hospital, the responsibility of the general practitioner does not cease till the patient again becomes a useful and economic unit.

My discussion will be a résumé of the generally accepted facts both of theory and practice concerning goitre. I shall avoid contested points and will not enter into a discussion along the remote fields of investigation yet unproven.

A. FUNCTION OF THYROID

1 We are certain that it is concerned with the development of skeletal and nerve structure.

2 It partly determines the growth of the secondary sexual characteristics.

3 It is vitally concerned with utilization of oxygen by the tissues or internal respiration.

4 There is a correlation not definitely understood in the function of other ductless glands, chiefly the thymus, adrenal and pituitary. This relationship exists both in health and disease.

Some of the puzzling results in the treatment of thyroid may some day be explained when this relationship is more clearly understood.

The clinical symptoms of goitre are in many cases directly proportional to the pathological changes in the gland. In the progressive changes

of the gland we have symptoms of over-activity of the thyroid, and in the regressive changes we have symptoms of lessened activity. Hence, it is important in treating goitre to have a clear concise knowledge of the normal anatomy, also a mental picture of the pathological changes that are going on.

B. ANATOMY OF THE THYROID

The normal thyroid presents two lateral lobes connected by an isthmus located on the anterior surface of the trachea, beneath the anterior cervical muscles. It weighs between 30 and 40 grams, its cut surface presenting a lobulated appearance, grayish red and glistening from the colloid content. There is an average in one gram of dried gland 3 mgms of iodine. A histological section shows follicles of fairly uniform size and shape, acini filled with densely staining colloid, and lined with a single layer of suboval epithelial cells. Between these follicles are the resting or fetal cells, so called because of their pre dominance in the embryonic stages.

1 In developing goitres, simple or exophthalmic, the thyroid enlarges, the blood supply increases, and the gland becomes softer. The iodine and colloid content diminish, follicles become larger, and the epithelial cells increase in size. These changes constitute simple hypertrophy and are what occur in simple adolescent goitre. If the exciting cause continues to operate, these changes increase in degree and to them is added proliferation and the formation of new follicles and with this the infoldings and projections into the follicles. These changes constitute hyperplasia. Since these two conditions are often found present in the same gland, they are grouped together.

2 Should the exciting cause cease to operate after the gland has arrived at this stage, in evolution toward recovery takes place and when complete, we have a colloid goitre. One author has stated that a colloid goitre represents a resting stage in a previous hyperplasia. This gland is smaller, blood supply is less, iodine and colloid content greater. The follicles remain larger, the cells are somewhat flatter and the colloid more vacuolated than a normal gland. Frequent progressions and regressions would result in a gland quite different from the normal. As far as is known this gland has the same function as a normal gland and the same sensitiveness to an increase or decrease of the iodine content.

3 If this gland should become so hypertrophic, so hyperplastic over a long enough period of time, breakdown or exhaustion of the parenchyma occurs, with resulting diminution in size

The above procedure is safe in the hands of any intelligent observer and may be a most important factor in the health and happiness of his patients.

Knowing that most goitres come from the simple adolescent type the prevention of this condition would seem to be an important step in medicine.

2 *Treatment of balanced goitre* That is, with no symptoms of increased or decreased function, depends upon a number of things.

a Simple or adolescent goitre treated practically as in the prevention. Lugol's solution dose modified according to age of patient given at least 4 and in cases of large goitre 6 months of the year.

b Foetal adenomata—remove upon diagnosis. Early they are simple of removal carrying no mortality but later they may be fatal. Other adenomata are removed either because of mechanical interference or for cosmetic reasons. Goitres are removed for obstruction, early signs of which are increased blood pressure and myocardial changes, often present before the tracheal and recurrent laryngeal involvement. The position and not necessarily the size determines the amount and severity of obstruction. It is obvious that a man with heavy anterior cervical muscles would get obstruction before a slender-necked woman with a goitre of same size.

3 *Hyperthyroidism*

A very complicated subject and study with many individual variations. We are always guided by the severity of the symptom, age and general condition of the patient, economic status, heart reserve etc. All have a bearing on our method of handling the case.

a In all cases first insist upon absolute rest in bed, until you are satisfied as to the true condition of the thyroid.

b Good hygiene, freedom from excitement, a forced diet, omitting such stimulating foods as tea, coffee, spices, the red meats and glandular foods, so as to keep the patient on as high a physical plane as possible.

c Search for and treat the exciting cause. This may be bad teeth, static bowel, prostatic abscess, or other focus of infection. Last and most important, infected tonsils. I attended a large goitre clinic recently and was surprised to hear the surgeon in charge state that practically all goitre patients had badly diseased tonsils. The nose and throat man of this same institution said that if he wanted to get a collection of real bad tonsils he would go to the goitre ward. Hence be on the lookout for diseased tonsils.

d For the heart, Tincture Digitalis in wine—xxx t.i.d. p.c. in water. Apply ice bag and give Luminal gr 15 or q.i.d.—and lastly Lugol's solution. Lugol's has found a very definite and valuable place in the treatment of goitre and especially as an aid in preparing the patient for operation. It should never be given except under the most careful observation and with the

knowledge and advice of your surgical consultant. Very often remarkable results come from Lugol's alone but do not place too much trust upon this because only too often do we get a recurrence of the symptoms and when a patient is once iodized and has a recurrence following we do not get as good results with Lugol's the next time. The second stage of the treatment is for the surgeon. A noted surgeon in the field of goitre has said that surgery is but the second step in the treatment of goitre. The first and third belonging to the general practitioner. Just a word about X-ray or radium, it should never be used except by those of wide experience and modern apparatus. Even then it has its disadvantages and even dangers.

4 *Neoplasms*

Treatment is entirely in the hands of the surgeon, radiologist and roentgenologist.

5 *Post-operative Treatment*

The fact that a patient has been to the hospital and has had a thyroidectomy does not mean that she is cured and needs no further treatment—far from it—the treatment from this stage on is a most important one. We must insist upon absolute rest in bed for at least six weeks, continued good hygiene, the same forced diet and often Lugol's solution for a period of one to four months depending on the individual case.

Lugol's is given in post-operative cases of adenomata then in small doses for a year, given each alternate month to prevent recurrence. The physician should observe the thyroid frequently and should have a basal rate done each month. The patient should keep a record of the morning and evening pulse rate and accurate record of the weight for at least a year following the operation.

In this way the physician will be able to tell whether enough or too much of the gland has been removed, also as to the reaction of the patient. Many complain of tracheal adhesions, which may be avoided by early massage with olive oil.

Destruction of the parathyroids sometimes occurs either from removal, absorption or from scarring so that their function is impaired. This results in chronic tetany which is evidenced in all the skeletal musculature, but more especially by carpo-pedal spasm. Massive doses of calcium lactate and parathyroid extract are given, but the results are rather disappointing.

In conclusion I wish to emphasize the following points:

1 That the treatment of goitre is primarily up to the general practitioner, who should thoroughly familiarize himself with the anatomy of the thyroid gland, and he should understand the relation of the anatomical changes to the clinical symptoms.

2 That prevention is the one and important measure, because the acute hyperthyroidism, the thyroiditis, and the adenomata probably all come

The above procedure is safe in the hands of any intelligent observer and may be a most important factor in the health and happiness of his patients.

Knowing that most goitres come from the simple adolescent type the prevention of this condition would seem to be an important step in medicine.

2 *Treatment of balanced goitre* That is, with no symptoms of increased or decreased function, depends upon a number of things.

a Simple or adolescent goitre treated practically as in the prevention. Lugol's solution dose modified according to age of patient given at least 4 and in cases of large goitre, 6 months of the year.

b Foetal adenomata—remove upon diagnosis. Early they are simple of removal carrying no mortality, but later they may be fatal. Other adenomata are removed either because of mechanical interference or for cosmetic reasons. Goitres are removed for obstruction, early signs of which are increased blood pressure, and myocardial changes, often present before the tracheal and recurrent laryngeal involvement. The position, and not necessarily the size, determines the amount and severity of obstruction. It is obvious that a man with heavy anterior cervical muscles would get obstruction before a slender-necked woman with a goitre of same size.

3 *Hyperthyroidism*

A very complicated subject and study with many individual variations. We are always guided by the severity of the symptom, age and general condition of the patient, economic status, heart reserve etc. All have a bearing on our method of handling the case.

a In all cases first insist upon absolute rest in bed, until you are satisfied as to the true condition of the thyroid.

b Good hygiene freedom from excitement, a forced diet, omitting such stimulating foods as tea, coffee, spices, the red meats and glandular foods, so as to keep the patient on as high a physical plane as possible.

c Search for and treat the exciting cause. This may be bad teeth, static bowel, prostatic abscess, or other focus of infection. Last and most important, infected tonsils. I attended a large goitre clinic recently and was surprised to hear the surgeon in charge state that practically all goitre patients had badly diseased tonsils. The nose and throat man of this same institution said that if he wanted to get a collection of real bad tonsils he would go to the goitre ward. Hence, be on the lookout for diseased tonsils.

d For the heart, Tincture Digitalis in wine—xxx tid-pc in water. Apply ice bag and give Luminal gr 15 or qid—and lastly Lugol's solution. Lugol's has found a very definite and valuable place in the treatment of goitre and especially as an aid in preparing the patient for operation. It should never be given except under the most careful observation and with the

knowledge and advice of your surgical consultant. Very often remarkable results come from Lugol's alone, but do not place too much trust upon this, because only too often do we get a recurrence of the symptoms and when a patient is once iodized and has a recurrence following we do not get as good results with Lugol's the next time. The second stage of the treatment is for the surgeon. A noted surgeon in the field of goitre has said that surgery is but the second step in the treatment of goitre. The first and third belonging to the general practitioner. Just a word about X-ray or radium, it should never be used except by those of wide experience and modern apparatus. Even then it has its disadvantages and even dangers.

4 *Neoplasms*

Treatment is entirely in the hands of the surgeon, radiologist and roentgenologist.

5 *Post-operative Treatment*

The fact that a patient has been to the hospital and has had a thyroidectomy does not mean that she is cured and needs no further treatment—far from it—the treatment from this stage on is a most important one. We must insist upon absolute rest in bed for at least six weeks, continued good hygiene, the same forced diet and often Lugol's solution for a period of one to four months, depending on the individual case.

Lugol's is given in post operative cases of adenomata then in small doses for a year, given each alternate month to prevent recurrence. The physician should observe the thyroid frequently and should have a basal rate done each month. The patient should keep a record of the morning and evening pulse rate and accurate record of the weight for at least a year following the operation.

In this way the physician will be able to tell whether enough or too much of the gland has been removed, also as to the reaction of the patient. Many complain of tracheal adhesions, which may be avoided by early massage with olive oil.

Destruction of the parathyroids sometimes occurs either from removal, absorption or from scarring so that their function is impaired. This results in chronic tetany which is evidenced in all the skeletal musculature, but more especially by carpo-pedal spasm. Massive doses of calcium lactate and parathyroid extract are given, but the results are rather disappointing.

In conclusion I wish to emphasize the following points:

1 That the treatment of goitre is primarily up to the general practitioner, who should thoroughly familiarize himself with the anatomy of the thyroid gland, and he should understand the relation of the anatomical changes to the clinical symptoms.

2 That prevention is the one and important measure, because the acute hyperthyroidism, the thyroiditis, and the adenomata probably all come

poles and often a bruit on auscultation. The exophthalmos is by no means a constant feature. The syndrome which accompanies this condition is known by all—nervousness, tachycardia, throbbing pulses, loss of weight and strength, tremor, trophic disturbances, characteristic eye signs, etc. The definite case is easily diagnosed.

B The second type occurs late in life, seldom with the exophthalmos, and characterized by the more severe myocardial changes and the presence of tumors in all the stages of differentiation, from the nearly normal thyroid tissue to the calcified stage. This type is often called the toxic goitre of Plummer. This type is rather a poor risk in effecting a cure. The exact difference, fundamentally, between the two types is not known, yet they are recognized very readily, clinically, and must be handled differently by the surgeon. The heart condition in the above types is quite characteristic, and though ultimately the same changes occur, they are quite different from the beginning. The first, where we have the pure hyperthyroidism, is globular, extremely active, sensitive to every stress, both physical and emotional, oftentimes a soft general praecordial murmur, without much enlargement, at first and no irregularity. Pulses are felt everywhere and constitute an early symptom.

The second type presents advanced changes in the myocardium and we have most any degree of enlargement, with or without murmur, usually all types of irregularity, and very often symptoms of broken compensation. In this latter condition the prognosis is grave, while the smaller heart, under proper treatment, usually returns to normal.

DIFFERENTIAL DIAGNOSIS

The definite case of hyperthyroidism is perfectly obvious, yet the borderline cases give much trouble. The various neuroses, the neurocirculatory asthenia of DeCosta and other conditions are often difficult to differentiate. However, there are certain aids which may be employed.

The basal metabolic test is of much value and is readily obtainable at all hospitals today. The neurotic has a prolonged history, and the pulse usually slows down quickly on bed rest. Basal rate seldom above plus 10, Geotch adrenalin test negative. The asthenia usually occurs in the protic individual with long waist and visceropotosis but with a suggestion of hyperthyroidism. Absence of eye signs and enlargement of thyroid are helpful points. Tuberculosis is occasionally confused with this type of goitre and only the careful observer with the aid of all his tests may be able to differentiate.

HYPOTHYROIDISM

A condition of importance to the general practitioner. In nearly every neighborhood there is a child with no thyroid, or one that is diseased

and without function, born of a goitre mother. He is a brachycephalic, fontanelles open, dull and heavy expression, protruding thick lips and tongue, short pudgy hands, with a tendency to umbilical hernia, scanty hair, pads of fat in the supra clavicular region, a child somewhat like a Mongolian idiot but with a few differences. The result of feeding such a child thyroid extract is nothing short of marvelous. The other cases of hypothyroidism are usually post operative and follow a too liberal removal of the thyroid gland or, are the results of an eroding infection. This condition lends itself readily and is corrected with thyroid gland feeding.

TREATMENT

Having reviewed the anatomy of the thyroid, followed the several changes to pathology, and observed how the clinical symptoms are somewhat determined by these changes, and alert to the importance of acute observation of the goitre and its host, the patient, we are now in a position to intelligently treat a goitre patient with some degree of success—and we are in that position.

Two other branches in either medicine or surgery have developed so satisfactorily and the patient with the huge, deforming and obstructive goitre is assured that the mortality of his operation is less than that of an average abdominal case. We are in a position to assure a prospective mother that her children, unborn as well as born, can in a large measure be goitre free, and in the most severe hyperthyroid cases given time and money, we can offer certain marked improvements and in many cases a cure with a mortality rate of less than 2%.

Personally, I am not in favor of ointments, iodized salt or non-standardized preparations of iodine. Besides, not knowing how much iodine your patient is getting, much harm may come from it. The best method is to always give Lugol's solution and keep your patient under careful observation while he is taking it. Insist upon the patient reporting at stated intervals and keep accurate records. Do not place too much dependence upon the advertising material on goitre supplied by drug houses, whose chief object is to sell its preparations. Rather rely upon standard text books for your authority.

PREVENTION OF GOITRE

1 Purely preventive Children in an endemic area, or born of a goitrous mother, should be given Lugol's solution, m j-v in a glass of milk each morning for a month, spring and fall. This for the ages of 7 to 15.

Women with a history of goitre should be given this same preparation when pregnant, m v each morning each alternate month during the pregnancy.

Women with a goitre history approaching menopause should be given Lugol's solution m v each alternate month for the year previous all ways, of course, under observation.

The above procedure is safe in the hands of any intelligent observer and may be a most important factor in the health and happiness of his patients

Knowing that most goitres come from the simple adolescent type the prevention of this condition would seem to be an important step in medicine

2 *Treatment of balanced goitre* That is, with no symptoms of increased or decreased function, depends upon a number of things

a Simple or adolescent goitre treated practically as in the prevention Lugol's solution, dose modified according to age of patient given at least 4, and in cases of large goitre, 6 months of the year

b Foetal adenomata—remove upon diagnosis Early they are simple of removal carrying no mortality, but later they may be fatal Other adenomata are removed either because of mechanical interference or for cosmetic reasons Goitres are removed for obstruction, early signs of which are increased blood pressure and myocardial changes, often present before the tracheal and recurrent laryngeal involvement The position, and not necessarily the size, determines the amount and severity of obstruction It is obvious that a man with heavy anterior cervical muscles would get obstruction before a slender necked woman with a goitre of same size

3 *Hyperthyroidism*

A very complicated subject and study, with many individual variations We are always guided by the severity of the symptom, age and general condition of the patient, economic status, heart reserve etc All have a bearing on our method of handling the case

a In all cases first insist upon absolute rest in bed, until you are satisfied as to the true condition of the thyroid

b Good hygiene freedom from excitement, a forced diet, omitting such stimulating foods as tea, coffee, spices, the red meats and glandular foods, so as to keep the patient on as high a physical plane as possible

c Search for and treat the exciting cause This may be bad teeth, static bowel, prostatic abscess, or other focus of infection Last and most important, infected tonsils I attended a large goitre clinic recently and was surprised to hear the surgeon in charge state that practically all goitre patients had badly diseased tonsils The nose and throat man of this same institution said that if he wanted to get a collection of real bad tonsils he would go to the goitre ward Hence, be on the lookout for diseased tonsils

d For the heart, Tincture Digitalis m vjij—xxx tid-pc in water Apply ice bag and give Luminal gr 15 or qid—and lastly Lugol's solution Lugol's has found a very definite and valuable place in the treatment of goitre and especially as an aid in preparing the patient for operation It should never be given except under the most careful observation and with the

knowledge and advice of your surgical consultant Very often remarkable results come from Lugol's alone but do not place too much trust upon this, because only too often do we get a recurrence of the symptoms and when a patient is once iodized and has a recurrence following we do not get as good results with Lugol's the next time The second stage of the treatment is for the surgeon A noted surgeon in the field of goitre has said that surgery is but the second step in the treatment of goitre The first and third belonging to the general practitioner Just a word about X-ray or radium it should never be used except by those of wide experience and modern apparatus Even then it has its disadvantages and even dangers

4 *Neoplasms*

Treatment is entirely in the hands of the surgeon radiologist and roentgenologist

5 *Post-operative Treatment*

The fact that a patient has been to the hospital and has had a thyroidectomy does not mean that she is cured and needs no further treatment—far from it—the treatment from this stage on is a most important one We must insist upon absolute rest in bed for at least six weeks continued good hygiene the same forced diet and often Lugol's solution for a period of one to four months, depending on the individual case

Lugol's is given in post-operative cases of adenomata then in small doses for a year, given each alternate month to prevent recurrence The physician should observe the thyroid frequently and should have a basal rate done each month The patient should keep a record of the morning and evening pulse rate and accurate record of the weight for at least a year following the operation.

In this way the physician will be able to tell whether enough or too much of the gland has been removed, also as to the reaction of the patient Many complain of tracheal adhesions, which may be avoided by early massage with olive oil

Destruction of the parathyroids sometimes occurs either from removal, absorption or from scarring so that their function is impaired This results in chronic tetany which is evidenced in all the skeletal musculature but more especially by carpo pedal spasm Massive doses of calcium lactate and parathyroid extract are given, but the results are rather disappointing

In conclusion I wish to emphasize the following points

1 That the treatment of goitre is primarily up to the general practitioner, who should thoroughly familiarize himself with the anatomy of the thyroid gland, and he should understand the relation of the anatomical changes to the clinical symptoms

2 That prevention is the one and important measure, because the acute hyperthyroidism the thyroiditis, and the adenomata probably all come

from the supposedly innocent adolescent goitre. Prevent this and you ward off the others.

3 Keep to standard medicinal preparations in treating goitre, and above all means, make frequent observations and keep accurate records of your cases.

4 Recognize the myxedematous child and treat him.

5 Always be ready to call in your surgical consultant, because surgery certainly has a definite place in the treatment of goitre.

DISCUSSION

DR A. L. PATCH, Windsor —Because I wished to get a line on the doctor's method of attack, from his paper, I wrote him, and he sent me a copy, so that I cannot plead unpreparedness, but after reading his paper I could not see that he left anything for me to say,—no place where I could contradict him, no place where I could add, unless it was perhaps simply to present the goitre stories of patients as I see them in and around Windsor, which is a definite goitre center.

The majority of the goitre patients which we see in such a center are the simply cystic types. They may develop in children as early as eight years of age, usually from eight to fifteen. They also develop, in women, at the time of the pregnancy. In these simple cystic types the Doctor has suggested using Lugol's solution. I have given up Lugol's, after trying simple sodium iodide, as I have gotten just as good results with the latter and it is more pleasant to take. I have had one particular failure with sodium iodide, in a girl about twelve, who had a vacation trip to Cape Cod, two months after we had omitted the iodide treatment. She was away about six weeks, and returned with her goitre entirely disappeared. The two months treatment on the iodide had shown no real benefit.

I have seen a very few of the myxedema cases. Most of the unbalanced goitres I have seen in our town have been the type known as Graves' disease, and one case only of myxedema. One case, which showed no symptoms, was a man of sixty who appeared with a small lump in the left lobe of the thyroid. His proved to be an adenoma, which went on, even though he submitted himself to the radium treatment and X-ray radiation. No beneficial results were obtained, and if anything the tumor grew more rapidly after radiation, and the man went out dead, due to the extension of the adenoma.

The cases of so-called Graves' disease, up to the present time, have been equally divided between male and female. They have been mostly residents on farms. I have tried to figure why these two basic types should develop in a locality where the general type is due, primarily, to the lack of iodine. Five of them occurred following an epidemic of influenza in 1918-19. Six lived on farms, where the water supply was com-

ing through a lead pipe. Two of them lived in the village, where this factor of lead poisoning could not enter, nor was there any definite history of acute infection. In all these I was optimistic enough to try the medical treatment rather than have them submit immediately to operation. All those that followed acute infections, responded to the treatment, with the so-called neutral bromide of quinine recommended by Jackson and Forchheimer. Whether it is the substitution of the bromine for the iodine or the action of the quinine we do not know.

Other preparations of quinine have not seemed to work, and the quantity of bromine is so infinitesimally small,—about 1/54th of a gram of quinine hydrobromide is bromine,—so in giving a gram of bromide you are giving a very little bromine. The combination is credited with benefiting a large number of cases.

Two of the cases that I have had have gone to operation, and one was to have been operated on yesterday, but was put off until the first of November. The first one was a basic adenoma and showed almost no tumor in the neck, above the clavicle, and for a time it bothered me to arrive at a diagnosis. The other man did not respond to medical treatment, and he was operated on a short time ago, and is not yet over his period of rest since leaving the hospital. The third case is to be operated on the first of November.

Just what are the broad, basic conditions to be classed as belonging in the etiological factors? It seems to me that something toxic has accounted for all of the unbalanced cases that have come up in this area where we should expect the simple cystic goitre rather than the type of goitre which suggests the excess of iodine.

DR M. D. CAREY, Ludlow —I don't know that I can add anything more to this very thoroughly discussed paper. I think Dr Lawliss has covered the ground exceptionally well, but if it is not superfluous I would like to say a word more about treatments.

Our experience, in surgical lines, has not been entirely favorable, in Ludlow. Throughout the country the treatment seems to sway from medicine to surgery, and back again with radium and X-ray mixed in a bit. Just at present it seems to be in favor of Lugol's solution. I used to think I got fairly good results with potassium iodide, with external applications of tincture of iodine, or 5% of iodine petrogen. I still use the external applications, and believe I get results massaging with 5% petrogen in combination with Lugol's solution, where the case does not respond to Lugol's solution alone. Possibly it is the massage and not the petrogen, that gives the apparent results.

I find that continued use of Lugol's solution over longer or shorter periods of time, will usually give results, and in most cases that do not respond immediately to any dosage will, after

considerably long periods, suddenly respond to treatment

I had one case in particular several years ago, apparently a quiescent case of exophthalmic goitre. I put the woman on Lugol's solution, and immediately she began to get a different set of symptoms, showing the occasional danger of the iodides in goitre. What I mean to emphasize is this, that there is a danger in connection with the use of iodine, because you may have a quiescent goitre that is suddenly stirred into action by the iodine.

A word more about preventive treatment. I believe that preventive treatment is the coming thing. Personally, I don't believe we are getting A No. 1 results in the treatment of goitre. I think our treatment is such that we would be justified in educating the public, and in putting more emphasis, on the use of preventive treatment in goitre. Not only educate the public but when we get them educated, broadcast systematically but not promiscuously, iodine and the use of iodine in the prevention of goitre. I don't believe our cures would justify not giving this line of treatment a bit of attention.

DR P. E. MCSWEENEY, Burlington.—There are just a few words which I would like to say about goitre. Before doing so I want to reiterate that we have heard a remarkable paper here this morning in the paper that was given us by Dr Eddy.*

Dr Lawliss has already told you much more about the anatomy of these cases than I know, but I am going to tell you some things which have given me many good results in the treatment of goitre. The ordinary cases of goitre you will not have to treat very much, but the hyperthyroid cases, and the so-called Graves' disease are the varieties of goitre which are going to give you a great deal of trouble. One of the best treatments for this condition is to put your patient to bed and have her stay from three to eight weeks. This is an excellent form of treatment. In addition to that, if your patient's heart is going very rapidly, you will find that digitalis is a very useful drug, and should be given in large enough doses to reduce the pulse rate. Generally the pulse rate runs from 110 to 140 or 150. A patient with a pulse rate of a 150 is weak, and that patient should be put to bed and digitalized. After that, when the patient is in fairly good condition the use of Lugol's solution is advisable. I have used Lugol's solution for some years, and in large doses. To children you can give small doses, but adults I start with ten drops, and have them use that for a week or two. I have them return so that I may observe the pulse rate and other symptoms. If they are not getting relief I increase the dose, and it is not unusual to have them take, one week, ten drops of Lugol's before meals, and a week later have them take 15 drops. Lugol's solution is certainly a good preparation to use in these cases.

Now, if you have had a case of exophthalmic goitre and have treated it for a long time, the best treatment will be obtained by having a part of the gland removed. There is no branch of surgery where you will get such brilliant results as you do from the removal of one lobe of a thyroid and tying off the superior and inferior thyroid arteries on the other side. Before the end of their two weeks' stay in the hospital they will tell you they feel better than they have for years.

There are other cases in which you will get very good results sometimes by one or two applications of X-ray. I do not use the X-ray myself, but I do get very excellent results in the use of radium. Radium certainly works wonders on these exophthalmic goitres which you cannot operate safely.

The exophthalmic goitre, operated on, is rather a serious and dangerous proposition. If the blood pressure and metabolism are right, and pulse rate around 100, you stand a very good chance of relieving and curing these patients by operation. All of these methods are well worth trying. I thank you.

DR C. H. BEECHER, Burlington.—There are one or two points in the management of goitre that I want to emphasize. Dr Lawliss has referred to some of them. I am sure too many wait for the symptoms of exophthalmos to appear before they make a diagnosis of Graves' disease. Ordinarily, it is one of the very late symptoms.

The metabolic rate is a very useful adjunct in the diagnosis, and in the borderline cases the deciding factor. You will save your patients a lot of inconvenience if you will remember that there is no sense in sending a case, with temperature, to have a reading done. It will be high, anyway. And in certain of the wasting conditions it will also run high, so that nothing but trouble, and confusion will result if a reading is done in those cases.

It would seem as though we ought to be governed by the stage in the treatment of any condition. When we harp too much about the use of surgery or medical care, and in goitre particularly, I am satisfied that the best results are obtained by using all of the means at our command. In certain cases medical measures will be sufficient, and in certain of the cases surgery is the only resort, and in a lot of them you have got to use everything you have and in some of those you won't get results. Whatever you use, you are going to make a serious mistake if you do not include rest. In the cases that you handle medically during the period of rest, you ought to include the prophylactic measures or removal of all sources of possible causes, particularly infections. If you use Lugol's, or any of the iodine preparations, the question of a minimum or a grain, or five grains, is not the deciding factor, but the important point is if you use iodine preparation, is to use it to a point

where you are satisfied you cannot get any results from it, or until you bring the pulse rate down. Once the pulse rate is brought down you can usually maintain that lowered level by the use of quinine hydrobromide. This is a good combination to use after you have reduced the rate with iodine. If, after the use of quinine, the condition does not maintain the improvement, then the rest must be definitely surgical. In combination with the use of any medication radiation is a valuable adjunct, but it ought to

be used by an expert, an expert in the use of radiation who knows something about goitre. A man may be considerable of an expert with the use of X-ray in bone work, and know nothing at all of its use in goitre. I think the important thing that impresses me about this discussion is that no matter how you handle your case, you ought to use, in any event, anything and everything you have, and you will have need of all of them.

CLASSIFICATION, PROGNOSIS AND CONTROL OF PATIENTS WITH HEART DISORDERS IN PREGNANCY*

BY BURTON E. HAMILTON, M.D.†

"HEART Diseases with Pregnancy" is a complicated subject. I will try simply to call attention to this distinct clinical problem in heart diseases, to what happens to women with damaged or possibly damaged hearts during the strain of pregnancy, and to a few of what I believe are the more important practical points in their control.

Following are some statistics gathered from the Boston Lying-In Hospital where I have watched patients with, or suspected of, heart disease through pregnancy during the last six years.

About seven and one-half per cent of all the patients in the obstetrical clinic are referred to the cardiac clinic suspected of having a heart disease, after the routine physical examination in the prenatal clinic.

They include a large group of patients with,—(1) Rheumatic heart disease of differing degrees of severity, and several small groups, in order of size, (2) A fairly large group with paroxysmal tachycardia, (3) A fair number with congenital heart, (4) A few with cardiovascular syphilis.

Each of these groups is a distinct clinical entity, and has been studied separately. But for the purpose of prognosis in pregnancy, obstetrical treatment, and clinic and hospital management, it has proved practical to separate all the referred cases into three divisions.

The least important division, *Class III* cardinals, is made up principally of patients who are referred for tachycardia, or breathlessness or heart pain or fainting. They prove, on direct examination, to have no clear evidence of damaged heart. They are patients with cardiac neurosis, or neuro-circulatory asthenia. Some of these patients are very troublesome,—they fear that they are in a dangerous condition. Occasional cases have very rapid hearts and falsely

suggest a failing heart by breathlessness and cyanosis. Actually, they are not in danger. They deserve reassurance and hygienic regime. They never, in my opinion, deserve interruption of pregnancy. It is possible that in some of the cases pregnancy might well have been postponed. Occasional similar cases date a severe and intractable disability from pregnancy. So much for this most interesting group.

There are also other cases that can be said to have no heart disease and classed as *Class III* cardinals who are referred because of extra systoles, or systolic murmurs of the cardio-respiratory type, or faint basal systolic murmurs. A few of the cases with extra systoles are troublesome,—a few have persistent and very frequent extra systoles sometimes in runs of two or more.

But, one hundred and fifty-four consecutive cases, placed in *Class III*, watched through pregnancy, resulted in no maternal deaths with seven baby deaths. No cases had true signs of a failing heart.

Class II cardinals are those who have signs of possible or doubtful heart damage, or signs of heart damage which is not considered serious, namely,—systolic murmurs, moderately loud, in many such cases there are third heart sounds, and a doubtful enlargement of the heart. Some of this group have had rheumatic fever or chorea. Undoubtedly, a fair number of the group have a true heart disease, and justify perhaps a diagnosis of rheumatic heart disease with mitral involvement. Others with basal systolic murmurs and a thrill, but without other clear evidence of heart damage, justify a diagnosis of "Possible Congenital Heart." A small group with paroxysmal tachycardia, infrequent, not severe, are included in *Group II* as not having severely damaged hearts.

The whole of *Group II* has an excellent prognosis. Though they have had no special obstetrical care, in two hundred and sixty-seven consecutive cases, there were two maternal deaths,

*Read at the Annual Meeting of the Vermont State Medical Society, Middlebury, October 13, 1927.

†For record and address of author see This Week's Issue, page 311.

—one of these was due to a pulmonary embolus seven days after a normal delivery, the other to a late toxemia of pregnancy with sepsis. No cases developed heart failure, and it is evident that an indefinite number of such women could go through pregnancy with safety so far as the heart is concerned.

Class I cardinals are those who have clear evidence of severely damaged hearts. This, in pregnant women, means that on direct examination they have shown one or more of the four following signs:

(1) Gross enlargement of the heart, (2) a diastolic murmur, (3) a significant disorder of the heart beat, (4) signs or history of congestive heart failure.

More than ninety per cent of the *Class I* cardinals at the Boston Lying-in Hospital were placed in *Class I* because they had mitral stenosis. The diagnosis of course based on the characteristic murmur. A very few have had gross enlargement of the heart with a systolic murmur. A few had aortic regurgitation without evidence of mitral stenosis. A few had paroxysmal attacks of tachycardia of enough frequency and severity to seem to me to warrant their inclusion in this group of patients with severely damaged hearts.

Class I cardinals (two hundred seven consecutive cases) in the Boston Lying-in Hospital have yielded eighteen maternal deaths (8.5%), forty-six baby deaths (22.0%), fifty-two had definite signs of failure.

This does not, of course, give a true picture of the maternal death rate to be expected in *Class I* cardinals in general under ideal control. But it is the actual death rate in the Boston Lying-in Hospital.

It is to be remembered that the *Class II* and *Class III* cases have had little special care whereas the *Class I* cases have had very special obstetrical and cardiac care.

The first thing of importance then in the control of patients suspected of heart disease, in pregnancy, is proper classification of the patients.

It would be a very valuable thing to be able to subdivide these *Class I* cases into groups that have a bad prognosis and others that have a good prognosis. Various attempts to subdivide them have been made, for example,—by effort tests, vital capacity determinations, classification by valves involved, etc. But these attempts have not proved practical.

It is possible to subdivide this group by very simple criteria into *Class IA*. *Class IA* consists of those members of *Class I* who have in addition to a severely damaged heart one of the following complications—(1) congestive heart failure, past or present, (2) rheumatic fever, present or recent, or signs of active endocarditis, (3) a dangerous disorder of the heart beat, such as auricular fibrillation, (4) a complica-

tion, in itself dangerous, such as nephritis or hypertension.

Class IA is of particular importance in that its members cannot be considered in any sense as safe pregnancy risks. In my opinion, the criteria for placing a patient in *Class IA* are the criteria for,—(1) advising interruption early in pregnancy, and (2) for warning a patient against pregnancy, and (3) for sterilization when practicable. In fact, pregnancy is not compatible with such heart conditions.

Though isolated cases falling into any one of these divisions (except cases proven to have active endocarditis) have been brought through pregnancy successfully,—it is only in the rarest cases that this has happened. Nearly all of this group that I have seen have been advised to have pregnancy interrupted, and most *Class IA* cases that I have seen early in pregnancy, or who probably were *Class IA* early in their pregnancy, who have not been interrupted, for one reason or another, have died in the latter months of pregnancy or soon after.

It has surprised me to find that roughly *twenty per cent of all the maternal deaths in the Boston Lying-in Hospital* has been furnished by *Class I cardinals*. Twenty-eight per cent of all the pregnancy deaths in the Faulkner Hospital come under this classification (private obstetrical wing).

Heart diseases complicating pregnancy constitute one of the major obstetrical problems.

There would be little satisfaction in collecting these figures if nothing could be done to improve them. The following table shows that during 1922 and 1923 there were seventy *Class I* cardinals, eighteen per cent of the mothers died, twenty-six per cent of the babies died. During 1924, 1925 and 1926, there were one hundred and fourteen *Class I* cardinals. The maternal death rate was reduced to 3.8 per cent and the baby death rate to nineteen per cent.

To what may the reduction in death rate be attributed?

Every pregnant woman who came to the hospital and failed to have a living baby to show at discharge was considered as furnishing a baby death. So that the reduction in maternal mortality was affected not at the expense of baby mortality by a wholesale interruption of pregnancy. The number of interruptions before the eighth month has been small.

Sterilizations have been done on practically no cases except the *Class IA* patients, namely those who have conditions incompatible with pregnancy as described. These sterilizations have been a factor in the improved maternal death rate. Sterilization is a valuable procedure. I should hate to take care of a large group of *Class I* cardinals in a pregnancy clinic if it were not possible to sterilize *Class IA* patients. As a matter of fact owing partly to the nature of the clientele of the hospital, only ten per cent of the

where you are satisfied you cannot get any results from it, or until you bring the pulse rate down. Once the pulse rate is brought down you can usually maintain that lowered level by the use of quinine hydrobromide. This is a good combination to use after you have reduced the rate with iodine. If, after the use of quinine, the condition does not maintain the improvement, then the rest must be definitely surgical. In combination with the use of any medication radiation is a valuable adjunct, but it ought to

be used by an expert, an expert in the use of radiation who knows something about goitre. A man may be considerable of an expert with the use of X-ray in bone work, and know nothing at all of its use in goitre. I think the important thing that impresses me about this discussion is that no matter how you handle your case, you ought to use, in any event, anything and everything you have, and you will have need of all of them.

CLASSIFICATION, PROGNOSIS AND CONTROL OF PATIENTS WITH HEART DISORDERS IN PREGNANCY*

BY BURTON E. HAMILTON, M.D.†

"HEART Diseases with Pregnancy" is a complicated subject. I will try simply to call attention to this distinct clinical problem in heart diseases, to what happens to women with damaged or possibly damaged hearts during the strain of pregnancy, and to a few of what I believe are the more important practical points in their control.

Following are some statistics gathered from the Boston Lying-In Hospital where I have watched patients with, or suspected of, heart disease through pregnancy during the last six years.

About seven and one-half per cent of all the patients in the obstetrical clinic are referred to the cardiac clinic suspected of having a heart disease, after the routine physical examination in the prenatal clinic.

They include a large group of patients with,—(1) Rheumatic heart disease of differing degrees of severity, and several small groups, in order of size, (2) A fairly large group with paroxysmal tachycardia, (3) A fair number with congenital heart, (4) A few with cardiovascular syphilis.

Each of these groups is a distinct clinical entity, and has been studied separately. But for the purpose of prognosis in pregnancy, obstetrical treatment, and clinic and hospital management, it has proved practical to separate all the referred cases into three divisions.

The least important division, *Class III* cardiacs, is made up principally of patients who are referred for tachycardia, or breathlessness or heart pain or fainting. They prove, on direct examination, to have no clear evidence of damaged heart. They are patients with cardiac neuritis, or neuro circulatory asthenia. Some of these patients are very troublesome,—they fear that they are in a dangerous condition. Occasional cases have very rapid hearts and falsely

suggest a failing heart by breathlessness and cyanosis. Actually, they are not in danger. They deserve reassurance and hygienic regime. They never, in my opinion, deserve interruption of pregnancy. It is possible that in some of the cases pregnancy might well have been postponed. Occasional similar cases date a severe and intractable disability from pregnancy. So much for this most interesting group.

There are also other cases that can be said to have no heart disease and classed as *Class III* cardiacs who are referred because of extra systoles, or systolic murmurs of the cardio-respiratory type, or faint basal systolic murmurs. A few of the cases with extra systoles are troublesome,—a few have persistent and very frequent extra systoles sometimes in runs of two or more.

But, one hundred and fifty-four consecutive cases, placed in *Class III*, watched through pregnancy, resulted in no maternal deaths, with seven baby deaths. No cases had true signs of a failing heart.

Class II cardiacs are those who have signs of possible or doubtful heart damage, or signs of heart damage which is not considered serious, namely,—systolic murmurs, moderately loud, in many such cases there are third heart sounds, and a doubtful enlargement of the heart. Some of this group have had rheumatic fever or chorea. Undoubtedly, a fair number of the group have a true heart disease, and justify perhaps a diagnosis of rheumatic heart disease with mitral involvement. Others with basal systolic murmurs and a thrill, but without other clear evidence of heart damage, justify a diagnosis of "Possible Congenital Heart." A small group with paroxysmal tachycardia, infrequent, not severe, are included in Group II as not having severely damaged hearts.

The whole of Group II has an excellent prognosis. Though they have had no special obstetrical care, in two hundred and sixty-seven consecutive cases, there were two maternal deaths,

*Read at the Annual Meeting of the Vermont State Medical Society, Middlebury, October 13, 1927.
†For record and address of author see This Week's Issue page 311.

—one of these was due to a pulmonary embolus seven days after a normal delivery, the other to a late toxemia of pregnancy with sepsis. No cases developed heart failure, and it is evident that an indefinite number of such women could go through pregnancy with safety so far as the heart is concerned.

Class I cardiacs are those who have clear evidence of severely damaged hearts. This in pregnant women means that on direct examination they have shown one or more of the four following signs:

(1) Gross enlargement of the heart, (2) a diastolic murmur, (3) a significant disorder of the heart beat, (4) signs or history of congestive heart failure.

More than ninety per cent of the *Class I* cardiacs at the Boston Lying-in Hospital were placed in *Class I* because they had mitral stenosis. The diagnosis of course based on the characteristic murmur. A very few have had gross enlargement of the heart with a systolic murmur. A few had aortic regurgitation without evidence of mitral stenosis. A few had paroxysmal attacks of tachycardia of enough frequency and severity to seem to me to warrant their inclusion in this group of patients with severely damaged hearts.

Class I cardiacs (two hundred seven consecutive cases) in the Boston Lying-in Hospital have yielded eighteen maternal deaths (8.5%), forty-six baby deaths (22.0%), fifty-two had definite signs of failure.

This does not, of course, give a true picture of the maternal death rate to be expected in *Class I* cardiacs in general under ideal control. But it is the actual death rate in the Boston Lying-in Hospital.

It is to be remembered that the *Class II* and *Class III* cases have had little special care whereas the *Class I* cases have had very special obstetrical and cardiac care.

The first thing of importance then in the control of patients suspected of heart disease, in pregnancy, is proper classification of the patients.

It would be a very valuable thing to be able to subdivide these *Class I* cases into groups that have a bad prognosis and others that have a good prognosis. Various attempts to subdivide them have been made, for example,—by effort tests, vital capacity determinations, classification by valves involved, etc. But these attempts have not proved practical.

It is possible to subdivide this group by very simple criteria into *Class IA*. *Class IA* consists of those members of *Class I* who have in addition to a severely damaged heart one of the following complications—(1) congestive heart failure, past or present, (2) rheumatic fever, present or recent, or signs of active endocarditis, (3) a dangerous disorder of the heart beat, such as auricular fibrillation, (4) a complica-

tion in itself dangerous, such as nephritis or hypertension.

Class IA is of particular importance in that its members cannot be considered in any sense as safe pregnancy risks. In my opinion, the criteria for placing a patient in *Class IA* are the criteria for,—(1) advising interruption early in pregnancy and (2) for warning a patient against pregnancy, and (3) for sterilization when practicable. In fact, pregnancy is not compatible with such heart conditions.

Though isolated cases falling into any one of these divisions (except cases proven to have active endocarditis) have been brought through pregnancy successfully,—it is only in the rarest cases that this has happened. Nearly all of this group that I have seen have been advised to have pregnancy interrupted, and most *Class IA* cases that I have seen early in pregnancy, or who probably were *Class IA* early in their pregnancy, who have not been interrupted for one reason or another, have died in the latter months of pregnancy or soon after.

It has surprised me to find that roughly *twenty per cent of all the maternal deaths in the Boston Lying-in Hospital has been furnished by Class I cardiacs*. Twenty-eight per cent of all the pregnancy deaths in the Faulkner Hospital come under this classification (private obstetrical wing).

Heart diseases complicating pregnancy constitute one of the major obstetrical problems.

There would be little satisfaction in collecting these figures if nothing could be done to improve them. The following table shows that during 1922 and 1923 there were seventy *Class I* cardiacs, eighteen per cent of the mothers died, twenty-six per cent of the babies died. During 1924, 1925 and 1926 there were one hundred and fourteen *Class I* cardiacs. The maternal death rate was reduced to 3.8 per cent and the baby death rate to nineteen per cent.

To what may the reduction in death rate be attributed?

Every pregnant woman who came to the hospital and failed to have a living baby to show at discharge was considered as furnishing a baby death. So that the reduction in maternal mortality was affected not at the expense of baby mortality by a wholesale interruption of pregnancy. The number of interruptions before the eighth month has been small.

Sterilizations have been done on practically no cases except the *Class IA* patients, namely those who have conditions incompatible with pregnancy as described. These sterilizations have been a factor in the improved maternal death rate. Sterilization is a valuable procedure. I should hate to take care of a large group of *Class I* cardiacs in a pregnancy clinic if it were not possible to sterilize *Class IA* patients. As a matter of fact owing partly to the nature of the clientele of the hospital, only ten per cent of the

where you are satisfied you cannot get any results from it, or until you bring the pulse rate down. Once the pulse rate is brought down you can usually maintain that lowered level by the use of quinine hydrobromide. This is a good combination to use after you have reduced the rate with iodine. If, after the use of quinine, the condition does not maintain the improvement, then the rest must be definitely surgical. In combination with the use of any medication radiation is a valuable adjunct, but it ought to

be used by an expert, an expert in the use of radiation who knows something about goitre. A man may be considerable of an expert with the use of X-ray in bone work, and know nothing at all of its use in goitre. I think the important thing that impresses me about this discussion is that no matter how you handle your case, you ought to use, in any event, anything and everything you have, and you will have need of all of them.

CLASSIFICATION, PROGNOSIS AND CONTROL OF PATIENTS WITH HEART DISORDERS IN PREGNANCY*

BY BURTON E. HAMILTON, M.D.†

"HEART Diseases with Pregnancy" is a complicated subject. I will try simply to call attention to this distinct clinical problem in heart diseases, to what happens to women with damaged or possibly damaged hearts during the strain of pregnancy, and to a few of what I believe are the more important practical points in their control.

Following are some statistics gathered from the Boston Lying-In Hospital where I have watched patients with, or suspected of, heart disease through pregnancy during the last six years.

About seven and one-half per cent of all the patients in the obstetrical clinic are referred to the cardiac clinic suspected of having a heart disease, after the routine physical examination in the prenatal clinic.

They include a large group of patients with,—(1) Rheumatic heart disease of differing degrees of severity, and several small groups, in order of size, (2) A fairly large group with paroxysmal tachycardia, (3) A fair number with congenital heart, (4) A few with cardiovascular syphilis.

Each of these groups is a distinct clinical entity, and has been studied separately. But for the purpose of prognosis in pregnancy, obstetrical treatment, and clinic and hospital management, it has proved practical to separate all the referred cases into three divisions.

The least important division, *Class III cardiacs*, is made up principally of patients who are referred for tachycardia, or breathlessness or heart pain or fainting. They prove, on direct examination, to have no clear evidence of damaged heart. They are patients with cardiac neurosis, or neuro-circulatory asthenia. Some of these patients are very troublesome,—they fear that they are in a dangerous condition. Occasional cases have very rapid hearts and falsely

suggest a failing heart by breathlessness and cyanosis. Actually, they are not in danger. They deserve reassurance and hygienic regime. They never, in my opinion, deserve interruption of pregnancy. It is possible that in some of the cases pregnancy might well have been postponed. Occasional similar cases date a severe and intractable disability from pregnancy. So much for this most interesting group.

There are also other cases that can be said to have no heart disease and classed as *Class III cardiacs* who are referred because of extra systoles, or systolic murmurs of the cardio-respiratory type, or faint basal systolic murmurs. A few of the cases with extra systoles are troublesome,—a few have persistent and very frequent extra systoles sometimes in runs of two or more.

But, one hundred and fifty-four consecutive cases, placed in *Class III*, watched through pregnancy, resulted in no maternal deaths with seven baby deaths. No cases had true signs of a failing heart.

Class II cardiacs are those who have signs of possible or doubtful heart damage, or signs of heart damage which is not considered serious, namely,—systolic murmurs, moderately loud, in many such cases there are third heart sounds, and a doubtful enlargement of the heart. Some of this group have had rheumatic fever or chorea. Undoubtedly, a fair number of the group have a true heart disease, and justify perhaps a diagnosis of rheumatic heart disease with mutual involvement. Others with basal systolic murmurs and a thrill, but without other clear evidence of heart damage, justify a diagnosis of "Possible Congenital Heart." A small group with paroxysmal tachycardia, infrequent, not severe, are included in *Group II* as not having severely damaged hearts.

The whole of *Group II* has an excellent prognosis. Though they have had no special obstetrical care, in two hundred and sixty-seven consecutive cases, there were two maternal deaths,

get into good condition for labor. This is pernicious advice for cardiacs. They cannot rest too much during pregnancy. They should be warned against exercise specifically.

- (8) Patients should be delivered in hospital. Patients should be prepared for a rest in bed of three weeks after delivery, if no failure is present, and for three weeks after all signs of failure have cleared, if failure has occurred. A similar strict regime should be followed for many weeks after discharge. The burden of pregnancy carries on to a diminishing extent for many weeks after delivery.

Attempts to avoid infection are probably largely futile, but it is reasonable to attempt to lessen the probability by the following rules—

- (1) The patient should avoid, as much as possible, public conveyances, shops, theatres,—any crowd.
- (2) If any member of the family has an acute infection, the patient should keep away from the sick one as much as possible.
- (3) Allow no visitors who have a cold, sore throat, etc.
- (4) If, in spite of precaution, as is often the case, the patient comes down with a cold or other sickness, the patient should go to bed at once, and stay there until well.

RECOGNITION OF FAILURE

Failure, when it occurs, may come suddenly and severely. I have, on a number of occasions seen patients without signs of failure at noon time go to town on a shopping expedition against advice and in the evening have all the signs of severe and violent decompensation. But in the majority of cases, failure occurs more gradually. Warning signs are few,—effort tests and vital capacity estimations are untrustworthy as prophets of failure. Expectoration of a small amount of blood, with no other signs of failure should put one on one's guard. Clear failure sometimes develops later. Some patients will tell of cough on exertion, of sudden coughing attacks after exertion, and no signs be found at examination. This probably means a transient failure. A Class I cardiac who complains of a cough should be examined at once. I have seen a number of failures and some fatalities in cases where the patient coughed for a day or two, particularly on lying down at night before notifying her doctor. The patient should be instructed to send for her physician at once, if she should raise blood or develop a cough. The first reliable sign of congestive failure in my experience, as Sir James MacKenzie has pointed out, is persistent râles at the lung bases. These may appear before the patient herself is conscious of increasing handicap. Therefore patients should have frequent examinations no matter how well they are doing.

TREATMENT OF FAILURE

Râles at the lung bases in Class I cardiacs means failure. *Failure indicates hospital or hospital conditions until delivery.*

There is often great temptation to disregard this rule. A patient with mitral stenosis at six months may be found to have a few râles at the lung bases, when the patient is put to bed, these signs may clear up over night, and the patient appear and seem as well as ever. I have seen a number of fatalities occur where such patients have been allowed out of hospital undelivered.

Clearly, if failure occurs early in pregnancy, the chance of bringing a patient to term successfully is slight. Therefore, most such cases indicate interruption of pregnancy. Where the failure occurs at six months or later, there is a good chance that by persistent hospital care the patient may be carried on until the child is viable. But, in no case is it justifiable to allow a person who has once failed during pregnancy to resume activity undelivered.

It is a lot of work to take a patient with mitral stenosis through pregnancy, but if pregnant women are carefully and competently examined for mitral stenosis, and patients who have it are controlled throughout pregnancy along the lines that I have just suggested, and delivery and anesthesia are expertly done, and patients are rested and controlled during the puerperium and for a considerable time thereafter, a distinct reduction in maternal and baby death rates in a community may be expected.

DISCUSSION

DR RAY E. SMITH, Rutland. In behalf of the members of this Society I desire to thank Dr. Hamilton for his paper. It was splendid and full of meat. I only wish the doctor had taken a little more time and given us more from his experience, especially as to treatment. You see, doctor, we do not see enough cases in any one group, at any one time, to allow us to formulate any routine plan as to treatment. We must form our plan of treatment not so much from personal experience as from the experience of men like yourself who see great numbers of these cases and can, as a result, draw conclusions that are based on many comparisons.

Some of the members of this society will recall some of the things I have had to say relative to this subject during the past few years.

Many of you will recall the statements that have been made by others in criticism of my statements relative to the frequency of abortion and dead foetuses in these cases. That is nonsense. The bad heart risk does not abort—unless you abort her. Don't fool yourselves with that false hope. I think Dr. Hamilton will agree with me in this statement.

It may be necessary for you to terminate labor in these heart cases that the mother may be

patients come back to the hospital in succeeding pregnancies. The percentage of cases sterilized is only twenty-six per cent of Class I. It would seem that if every case that was sterilized that normally would have come back to the clinic pregnant, had done so and died, there would have been less than one more death per year.

All Class I cardiacs have been cared for in the hospital. They have been treated as particularly important cases. They have been delivered by the visiting obstetrician under the best conditions procurable. Type of delivery and anesthesia have been determined by consultation on the individual cases. The obstetrician and the cardiologist have been personally familiar with each case and jointly responsible. The hospital has allowed every reasonable facility for special care. I am sure these cases demand this. But there has been no great change in the obstetrical treatment, type of delivery and anesthesia of these cases. The facilities for caring for them were as good in 1922 and 1923 as during the last three years. As I have watched the clinic, it seems to me that the lower death rate is due to very simple matters,—an early recognition of the cases, and to their better medical control during pregnancy.

The subject of "*Control of Patients with Severely Damaged Hearts in Pregnancy*" is too involved to cover completely. More than ninety per cent of the Class I cardiacs,—those that furnish the deaths,—are patients with mitral stenosis. Let us consider very briefly the handling of a patient without complication, or without previous decompensation, who has a mitral stenosis and is seen early in pregnancy.

First, the patient with mitral stenosis must be recognized. A certain number of failures are directly due to overlooking a mitral stenosis or failing to recognize it early in pregnancy. In this clinic and to a less extent in private cases in a large percentage of cases with mitral stenosis, there is no clear history of rheumatic infection, and there is no evidence of gross enlargement of the heart. Often the patient is leading a relatively normal life and has no knowledge of a seriously damaged heart. The diagnosis is only to be made by auscultation of the heart. I know of no physical sign that can be learned, and that is of importance, that is so difficult to learn as the mitral diastolic murmur. Nevertheless, so far as I can tell, only an occasional case is now overlooked in the prenatal clinic of the Boston Lying-in Hospital. Often the obstetrical examination fails to recognize the mitral diastolic murmur, but the examiners are on the alert for cardiacs, and send all cases with suspicious sounds or murmurs or rheumatic history for consultation.

TREATMENT

The indications for care of these cases show up most clearly in the unsuccessful group. I

have personally seen more than thirty women with mitral stenosis who died during pregnancy, delivery or puerperium. A very small number have died of complications not associable with the heart. The deaths in another very small number have been sudden and unexpected;—some of these have had a fatal embolus from a thrombus formed in the heart. Others that have died suddenly have shown no cause for death.

The great majority of the deaths have occurred in congestive heart failure. Study of patients with mitral stenosis who have developed congestive failure during pregnancy who have entered the pregnancy without complication or previous failure (this group is more than twice as large as the group of fatal cases) shows only rare cases that develop failure without evident cause. The great majority of those who fail, do so because of an over-exertion or an intercurrent infection, a tonsillitis, grippe, influenza, etc., or both over-exertion and infection. Such failures are largely preventable.

Patients should be placed on a rigid regime and observed carefully to see that they are following it. At the risk of appearing banal, I will read an outline of the more important points of such a regime.

- (1) Ten (10) hours in bed each night
- (2) Lie down one-half hour after each meal
- (3) No hurrying, climbing, lifting. Light house work. Walking about on the level is permitted, but climbing hills and stairs should be restricted to the absolute practical limit. No washing, scrubbing, shaking rugs, moving furniture, etc.
- (4) No shopping, not even at local stores. So many women have developed congestive heart failure directly following and obviously the result of a shopping trip to town that we have routinely forbidden this.
- (5) If it is necessary to move the household to other quarters, it is best to have the mother away from home for the whole process. Families, of course, often move to larger quarters when they find their number is to increase. Many cardiac patients have developed failing hearts during the process of moving.
- (6) Have another woman in the house throughout the pregnancy, not only to help in the routine work and in the shopping, but to enable the patient to go to bed at once if signs of failing heart begin, or promptly at the onset of the almost inevitable grippe or cold. If help cannot be hired for any reason, it is often possible to have a self-sacrificing relative come to live with the patient, if the importance of this is thoroughly explained.
- (7) Avoid "physical exercise" in an endeavor to get into condition for labor. Many patients have the idea, and they are often told by their friends that they must exercise to

DR. WILLIAM WARREN TOWNSEND

In the death of Dr William Warren Townsend which occurred on February 20th 1928 the State loses one of its widely known physicians and surgeons His death was the result of cerebral hemorrhage and he lived only a few hours after the attack.

Dr Townsend was born in Elizabeth New Jersey April 8 1870 the son of Louis and Caroline McKinnlev Townsend

He was educated at the Common schools of Elizabeth at Trinity School of New York City and the Universities of Virginia and Vermont receiving his medical degree from the latter in 1893

In 1894 he located in Rutland and was soon an outstanding figure in the profession For several years he has maintained an office in the city of Burlington He was professor of genito-urinary diseases at the University of Vermont Medical College attending surgeon in genito-urinary diseases at Mary Fletcher Hospital and Fanny Allen Hospital consulting genito-urinary surgeon at the Rutland City and Proctor hospitals He was also attending urologist at the Bishop De Goesbriand hospital and genito-urinary consultant at Ports of Embarkment in the World War

He was a Lieutenant Colonel in the Officers Reserve Corps a member of the American Medical Association ex-president of the Vermont State Medical Society member of the American Association Genito-Urinary Surgeons and American Urological Society a former president of the New England Urological Society a member of the New England Surgical Society of the Societe Internationale d'Urologie and contributed to many medical journals

He was a member of St Paul's Church Ethan Allen Club Wauhnakee Mohican and Champlain Yacht Clubs the Lotus Club of New York Mt Mansfield Tront Club and Rutland Country Club He was a great lover of horses especially the Morgans and saddle horses

He is survived by his wife who was Agnes Graves of New York City and two sons Dr William Graves Townsend who was associated with him, and Guy Ballard Townsend of Rutland

DR ERNEST O CHELLIS

Dr Ernest O Chellis a former member of the Windsor County and Vermont State Medical Societies died December 28 1927 age 57 at his home in Narrowsburg N Y., of Gastric Ulcer Previous to his moving to New York State he practiced in Springfield Rutland Danby and Felchville He graduated from Baltimore Medical College in 1896 He was a member of the Pennsylvania State Medical Society at the time of his death

NEWS ITEMS

Dr Wallace M Pierce graduate of U V M 1898 and then practicing for five years in Middlesex and Newbury Vermont, has returned from Howard Beach Long Island where he has been recently located doing detail work for the Abbott Laboratories

Dr Andrews has returned to his home in Underhill from the Mary Fletcher Hospital where he underwent an operation for appendicitis about a month ago

Dr Willis B Fitch of St Johnsbury is spending two weeks in Bermuda accompanied by professional and business friends

Dr John B Gifford of Randolph has returned from an extended trip of two months A good portion of his time was spent in visiting the clinics of Philadelphia and Rochester Minnesota

Dr Ray E Smith of Rutland was operated upon March 6th at the Rutland Hospital for acute Diverticulitis

COUNTY REPORTS

Meeting Washington County Medical Society at Hotel Barre December 30, 1928 Meeting called to order by Dr Wark Dr Stewart acting secretary Dr Wark gave resumé of work done in effort to create rules governing a Hospital to make it conform to standard of the American College of Surgeons Dr Lindsay showed cards and gave explanation of how the Montpelier Hospital managed laboratory examinations After a general discussion it was moved to adjourn
J W STEWART Acting Secretary

MISCELLANY

REPORT OF VERMONT STATE DEPARTMENT OF PUBLIC HEALTH FOR FEBRUARY 1928

The incidence of communicable diseases during the month was unusually low the cases reported being as follows chickenpox 193 diphtheria 3 measles 104 mumps 144 lethargic encephalitis 1 scarlet fever 59 typhoid fever 1 tuberculosis 10 whooping cough 79

The Laboratory of Hygiene made 1947 examinations including the following

Examination for diphtheria bacilli	80
Widal reaction of typhoid fever	32
tubercle bacilli	138
evidence of syphilis	274
gonococci in pus	77
Examination of blood for contagious abortion in	
cattle	34
blood for white diarrhoea of	
fowls	948
water	133
milk	119
foods and drugs	9

The Venereal Disease Division reports as follows

Cases of gonorrhea	28
syphilis	50
gonorrhea reporting for treatment	4
syphilis reporting for treatment	7
Cases for intravenous treatment	7
Total treatments	40
Gonorrhea outfits distributed	98
Wassermann outfits distributed	352

The Division of Tuberculosis published and distributed 12 000 copies of the Modern Health Crusader

During the month the Division of Poliomyelitis Aftercare saw 38 patients fitted 6 new pieces of apparatus and removed one plaster cast. Twenty patients were admitted to hospitals and 12 patients were discharged from hospitals

In the Maternity and Infancy Division the nurse visited 8 towns cooperating with leaders of various Home Bureaus giving health talks and conducting classes in infant care Three hundred forty-one let-

saved Most of these mothers stand the strain of pregnancy well, however I wish to reemphasize what the doctor has said relative to rest in these cases **ABSOLUTE REST** is the first requisite in treatment of pregnant women, with heart lesions

The doctor has said nothing about medication in these cases I am a firm believer in medication in these cases Thorough digitalization is to my mind an essential, and that in accordance with Eggeston's rule Fifteen minims of digitalis TID is NOT "Digitalization" Use your drug for a purpose and get the effect you are after

These heart cases do not abort They do not die during pregnancy *They die after labor is completed* They die because an already overburdened heart responds to the stress and strain of labor and meets the extra demands at the expense of its reserve They die when the demand upon that heart has been completed and the job performed It is **AFTER** labor that the fatal issue comes

I realize my temerity in mentioning Caesarian section in connection with these cases, but it has a very definite part in their treatment Given a woman with a decompensated heart, last months of pregnancy, and commencing labor, Caesarian section under morphine, local anesthesia, or under ether, offers an alternative to labor that may well be given consideration Especially is this true if the heart case is an aged primipara or gives a history of previous labors of great length and with instrumental termination Caesarian section is no cure-all for the ills of pregnancy It is an operation that is overdone by many It is a veritable life-saver in the selected case and its relative indications are increasing amongst those best fitted to pass judgment upon obstetrical procedures The treatment of heart disease in the pregnant woman is a complicated matter and will call upon all the skill of which you are possessed The treatment of heart disease in pregnancy, mind you, is the treatment of heart disease Pregnancy is simply a complicating factor

OBITUARIES

DR BARNET FRANK

Dr Barnet Frank of Burlington Vermont died at a local hospital eleven days after an operation for removal of the appendix

He was born January 30, 1891, was a graduate of Burlington High School and received his medical degree at the University of Vermont, class of 1915 He had served his city as Alderman, was a volunteer in the World War, serving overseas as a Lieutenant In college he stood high both as a student and an athlete playing on the Varsity football team for four years He was a Knight of

Pythias, a member of the Jewish Holy Society and of Archibald Street Synagogue

He is survived by his wife and three sons, a mother, seven brothers and three sisters

DR FREMONT HAMILTON

Dr Fremont Hamilton for thirty five years a practicing physician in Brattleboro, died of cancer, February 23, 1928, aged seventy

He was born in Hartland, Maine, October 10, 1857, a son of Dr Henry Warren Hamilton and Eliza Graves Hamilton

He received his early education in the schools of Brandon, Vermont and graduated from Middlebury College in 1878 He received his medical degree from the New York Homeopathic College in 1882

He practiced in Rutland, Vermont, and Springfield Mass, before locating in Brattleboro, where he built up an extensive practice

He was a member of the Vermont Homeopathic Medical Society, a Mason, and a member of the Congregational Church

He is survived by his wife a son and one sister

DR JOHN D BREWSTER

In the passing of Dr John D Brewster at his home on Pine Street Windsor Vt on Wednesday January 20th 1928 not only have his friends and relatives but the whole community, sustained a distinct loss Not only was he the oldest physician in years and also in the point of service in this vicinity, but his unfailing kindness to the poor and aged, his honesty and integrity and his interest in his friends and the affairs of the Town and State even while confined to his room by suffering will long be remembered

John Densmore Brewster was born in Hartland, Vt April 19 1850, the youngest child of Seth Brewster and Eliza McKenzie Densmore In his early years he attended school in Woodstock, at the Green Mountain School at South Woodstock and when 18 years of age taught for a time his first school being in his home town of Hartland Afterwards he attended the Burlington Medical School during 1878 and 1879 later taking a post graduate course at the College of Physicians and Surgeons in New York City On May 1, 1880 he came to Windsor and for 45 years has practiced his chosen profession here, even after the ravages of disease made it almost impossible at times

On May 31 1894, he was united in marriage to Caroline L Bourne of Auburndale Mass who died two years ago At the time of his death Dr Brewster had been town health officer for 30 years

Dr Brewster is survived by nephews and nieces Also left to mourn him are Mr and Mrs Joseph Osmer who have cared for him most tenderly during his illness Mr Osmer having been with the doctor for a period of ten years

DR EATON V REYNOLDS

Dr Eaton V Reynolds of Fairfax died February 16, 1928, at the St Albans Hospital in his seventy first year

He is survived by two daughters Mrs James Hotchkiss and Mrs Cecil King The funeral was held at the home of Mrs Hotchkiss the following Sunday

DR WILLIAM WARREN TOWNSEND

In the death of Dr William Warren Townsend which occurred on February 20th 1928 the State loses one of its widely known physicians and surgeons His death was the result of cerebral hemorrhage and he lived only a few hours after the attack.

Dr Townsend was born in Elizabeth New Jersey April 8 1870 the son of Louis and Caroline McKimley Townsend

He was educated at the Common schools of Elizabeth at Trinity School of New York City and the Universities of Virginia and Vermont receiving his medical degree from the latter in 1893

In 1894 he located in Rutland and was soon an outstanding figure in the profession For several years he has maintained an office in the city of Burlington He was professor of genito-urinary diseases at the University of Vermont Medical College attending surgeon in genito-urinary diseases at Mary Fletcher Hospital and Fanny Allen Hospital consulting genito-urinary surgeon at the Rutland City and Proctor hospitals He was also attending urologist at the Bishop De Goesbriand hospital and genito-urinary consultant at Ports of Embarkment in the World War

He was a Lieutenant Colonel in the Officers Reserve Corps a member of the American Medical Association, president of the Vermont State Medical Society, member of the American Association Genito-Urinary Surgeons and American Urological Society a former president of the New England Urological Society a member of the New England Surgical Society of the Societe Internationale d'Urologie and contributed to many medical journals

He was a member of St Pauls Church Ethan Allen Club Waubesaee Mohican and Champlain Yacht Clubs the Lotus Club of New York Mt Mansfield Tront Club and Rutland Country Club He was a great lover of horses especially the Morgans and saddle horses

He is survived by his wife who was Agnes Graves of New York City and two sons Dr William Graves Townsend who was associated with him and Guy Ballard Townsend of Rutland

DR. ERNEST O CHELLIS

Dr Ernest O Chellis a former member of the Windsor County and Vermont State Medical Societies died December 28 1927 age 57 at his home in Narrowsburg N Y of Gastric Ulcer Previous to his moving to New York State he practiced in Springfield Rutland Danby and Felchville He graduated from Baltimore Medical College in 1896 He was a member of the Pennsylvania State Medical Society at the time of his death

NEWS ITEMS

Dr Wallace M Pierce graduate of U V M 1898 and then practicing for five years in Middlesex and Newbury Vermont has returned from Howard Beach, Long Island where he has been recently located doing detail work for the Abbott Laboratories

Dr Andrews has returned to his home in Underhill from the Mary Fletcher Hospital where he underwent an operation for appendicitis about a month ago

Dr Willis B Fitch of St. Johnsbury is spending two weeks in Bermuda accompanied by professional and business friends

Dr John B Gifford of Randolph has returned from an extended trip of two months A good portion of his time was spent in visiting the clinics of Philadelphia and Rochester Minnesota

Dr Ray E Smith of Rutland was operated upon March 6th at the Rutland Hospital for acute diverticulitis

COUNTY REPORTS

Meeting Washington County Medical Society at Hotel Barre December 30, 1928 Meeting called to order by Dr Wark Dr Stewart acting secretary Dr Wark gave resumé of work done in effort to create rules governing a Hospital to make it conform to standard of the American College of Surgeons Dr Lindsay showed cards and gave explanation of how the Montpelier Hospital managed laboratory examinations After a general discussion it was moved to adjourn

J W STEWART Acting Secretary

MISCELLANY

REPORT OF VERMONT STATE DEPARTMENT OF PUBLIC HEALTH FOR FEBRUARY 1928

The incidence of communicable diseases during the month was unusually low the cases reported being as follows chickenpox 193 diphtheria 3 measles 104 mumps 144 lethargic encephalitis 1 scarlet fever 59 typhoid fever 1 tuberculosis 10 whooping cough 79

The Laboratory of Hygiene made 1947 examinations including the following

Examination for diphtheria bacilli	80
Widal reaction of typhoid fever	32
tubercle bacilli	138
evidence of syphilis	274
gonococci in pus	77
Examination of blood for contagious abortion in cattle	34
blood for white diarrhoea of fowls	948
water	133
milk	119
foods and drugs	9

The Venereal Disease Division reports as follows

Cases of gonorrhea	28
syphilis	50
gonorrhea reporting for treatment	4
syphilis reporting for treatment	7
Cases for intravenous treatment	7
Total treatments	40
Gonorrhea outfits distributed	98
Wassermann outfits distributed	352

The Division of Tuberculosis published and distributed 12 000 copies of the Modern Health Crusader

During the month the Division of Poliomyelitis After-care saw 38 patients fitted 6 new pieces of apparatus and removed one plaster cast Twenty patients were admitted to hospitals and 12 patients were discharged from hospitals

In the Maternity and Infancy Division the nurse visited 8 towns cooperating with leaders of various Home Bureaus giving health talks and conducting classes in infant care Three hundred forty-one let-

ters have been sent out to Presidents of Women's Clubs, Parent teacher Associations, League of Women Voters and school superintendents calling their attention to the significance of May Day

RESPONSIBILITY

The individual physician bears a responsibility to the medical profession. In so far as the medical profession, considered as such, bears an untarnished reputation for accurate knowledge of disease, skill in diagnosis, ability to render proper treatment, and honesty of purpose, the public will have confidence. This reputation can be acquired only by actual deeds. In so far as the reputation of the profession along these lines is impaired, public confidence is diminished. As public confidence in the medical profession diminishes, the prestige of irregular types of the healing art increases.

Acts of the medical profession which determine its reputation are performed by individuals. For each failure of an individual physician to personally maintain proper standards, the reputation of the profession as a whole suffers. When confidence in the medical profession is weakened, confidence in the individual physician weakens also. Certain individual acts may apparently and often times do lead to immediate gain. It is for the individual to determine whether this gain equals the cost.

Confidence in regular medical practice is the physician's largest asset. The individual physician is responsible to the medical profession, and it is a duty to commit no acts that will impair in any way the standing of regular medical practice.

W G R

DO YOU KEEP A RAT BOARDER?

It has been estimated that it costs one-half cent a day to support a rat. It is also estimated that the rat population in the United States equals the human population, so the cost of supporting this army of rats exceeds the two hundred million dollar mark counting loss to property and crops. Rats are selective in their choice of food, preferring the best quality if they can secure it, rather than the waste so their destruction of great food storage supplies and crops must be counted as a tremendous economic loss. This loss is felt more keenly in the rural sections and on the farms where there is perhaps less crop protection against the inroads of rats. It was reported from Iowa that in one winter rats ate 500 bushels of corn out of 2 000 bushels stored and 71 dozen eggs out of 100 dozen stored.

While the economic loss is important enough to warrant a campaign against rats, the fact that rats are carriers of disease provides the more important excuse from a public health standpoint. Rats nest and breed in filthy places and frequent manure piles, garbage heaps and sewers. Thus they may directly spread disease germs from these sources by contaminating food supplies with which they are in constant touch.

In slaughter houses unprotected against rats and where offal is not 'sanitarily' disposed of, rats may acquire trichinosis from eating hogs so infected thus spreading the source of this disease. The greatest danger to health from rats is in the spread of bubonic

plague due to the fact that the rat harbors the flea which may carry the infection. In European countries in the past the plague has been the cause of thousands of deaths in some of the great epidemics. Since it is known that plague is carried by the rat, precautionary measures have been developed at the borders of countries, especially at the shipping ports of infected sections whereby the rat is kept out of boats. Thus by ship fumigation and by rat proofing of boats and docks, by the eternal vigilance of the U S Public Health Service our great shipping ports on the Atlantic and Pacific and Gulf are well protected against rat borne plague.

Since rats form a huge economic as well as public health problem and may be the cause of minor illnesses among individuals as well as plague epidemics, it behooves every householder to wage war against the rat and for communities to plan campaigns against this offender. This may be done by rat proofing of buildings by concrete, by keeping food from rats, by using rat enemies such as cats, dogs and ferrets by traps, by poisons by shooting, by fumigation.—*Bulletin Connecticut State Department of Health*

DANGERS OF SLENDERIZING

In the campaigns against tuberculosis now being waged in our cities and towns much of the emphasis is being placed on prevention in the early years of life. It is during these years under twenty that people are susceptible to this disease.

One factor in increased susceptibility to tuberculosis among young people is the present overemphasis of the 'slendering process'. To keep up with the present demands for a pipe stem silhouette young people are deliberately weakening their natural resistance to tuberculosis and other diseases by keeping their weight down far below the danger line.

While an excess of overweight in an adult over 40 years is definitely counted a handicap by life insurance companies, the young person whose growth has not fully been completed should maintain a comfortable margin of weight above the normal as a protective measure against disease. Dieting because fashion dictates is an unwise plan since it may lead to a diet which is lacking in many of the essentials that normal nutrition demands and health depends upon.

DIET RATIONALLY

Dieting, if one must, should be under the guidance of one who understands the principles of proper nutrition. There are many adherents of the various diet fads: a starchless sugarless diet, a fatless diet, a high protein diet each claiming results in amazingly short time. Probably a foodless diet is also tried by some who wish to do the trick quickly. There is nothing that should show results so soon as to provide no fuel for one's activity, thus draining one's own body tissues for this purpose.—*Excerpts from the Bulletin of the Connecticut State Department of Health*

Case Records
of the
Massachusetts General Hospital

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, M.D
F M PAINTER, A.B., ASSISTANT EDITOR

CASE 14061

A DARK SKINNED MAN WITH DYSPNEA
AND WEAKNESS

MEDICAL DEPARTMENT

An American workman forty-three years old entered February 26

Five months before admission he began to have dyspnea on exertion and to urinate once at night. The dyspnea had gradually increased until he now had it even when quiet. In November he stopped work. For the past three weeks he had had slight edema of the legs with pain in the calves or knee joints at times. For a week he had had slight cough. His appetite and sleep were poor. During the winter he had lost twenty-five pounds.

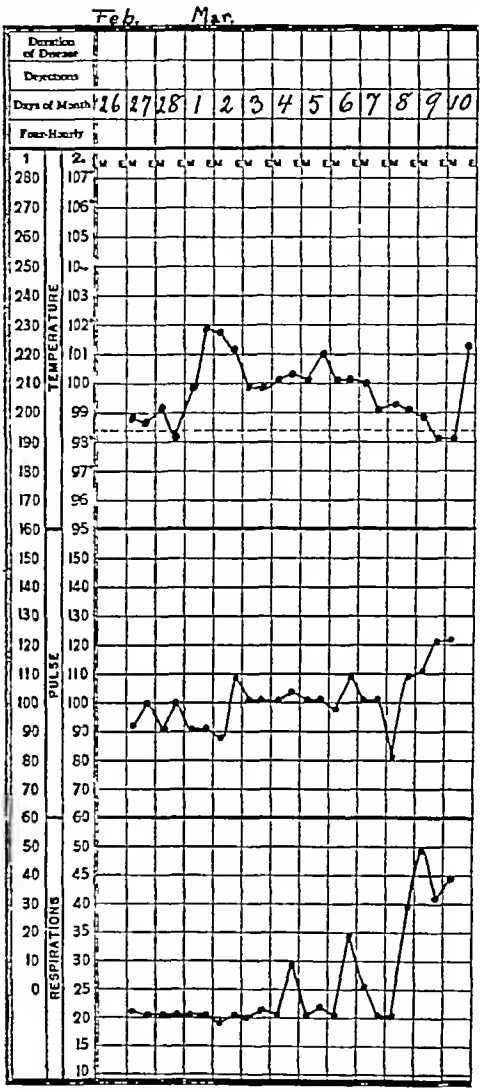
His family history is not important. He had gonorrhea twice thirty years before admission. He drank four or five glasses of beer or whiskey a day, but "never drank to excess." He denied syphilis.

Clinical examination showed a well nourished, dark skinned man. Apex impulse of the heart not seen or felt. Left border of dullness in the fifth space 14 centimeters from midsternum, just outside the nipple line. Right border 3 centimeters to the right. Rhythm regular. Sounds rather faint. Second sounds equal and faint. A slight systolic murmur at the apex. Pulses equal, synchronous, regular, of normal volume and slightly increased tension. Artery walls palpable. Systolic blood pressure 137. Chest barrel shaped. Lungs hyperresonant. Slight dullness at the left base behind, with diminished breathing and many fine moist râles. At the right base a few moist râles on deep inspiration. Occasional scattered coarse râles in both backs. Slight shifting dullness in the flanks. Liver dullness from the seventh rib to 3 centimeters below the costal margin. Edge not felt. Genitals extemities, pupils, knee-jerks and plantar reflexes normal.

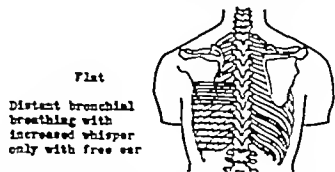
Amount of urine 14 to 79 ounces, specific gravity 1.005 to 1.006, cloudy at all of three examinations, a slight trace to a very slight trace of albumin at all, much pus in the sediment at all (No catheter specimen.) Blood 9,400 to 28,500 leukocytes, hemoglobin 90 per cent, smear normal. Stool negative.

Temperature, pulse and respirations as shown in the chart.

The day after admission the visiting physician found the first sound valvular and the post-diastolic pause shortened. March 1 the sputum became bloody, the temperature, pulse and respira-



tions rose, and the patient had pain in the right side of the chest. That night there was diminished breathing in the region of the left scapula. The following day the lung signs were as shown in the diagram. The general condition was fair.



March 4 he began to complain of pain in the right calf. The following day the circumference of the leg was three centimeters more than that of the left. An ice bag relieved the pain. The signs in the lungs were now very slight.

March 7 the left back was tapped and markedly turbid straw colored fluid withdrawn 95 per cent of the cells were mononuclears, about two thirds of them large (endothelial), and there were a few polynuclears. A culture showed no growth. The following morning the temperature was a little lower and the patient felt better. March 10 the right back was full of consonating râles with bronchovesicular breathing, dullness and increased voice. The left back was still dull at the base, the only bronchial breathing was in a small patch near the scapular angle. There was a good deal of bloody sputum. The condition gradually grew worse. The patient complained of considerable pain in the chest, especially on cough. March 11 the temperature rose again. The pulse was of poor quality. The physical signs did not change. That day the patient died.

DISCUSSION

BY RICHARD C CABOT, M D

NOTES ON THE HISTORY

I am interested here, as I always am, in the sequence of events. The dyspnea was first, the edema last. The dyspnea has been going on for five months, the edema only for three weeks. Dyspnea first and edema last is the regular sequence in cases of cardiac failure. I begin to suspect that we are dealing with a case of heart disease. Of course the possibility of kidney disease must be kept in mind, or of some cause of edema that would produce dyspnea or local pressure in the chest. But leaning as we always must on the doctrine of chances we have to say the commonest of all diseases now is heart disease and the commonest of all causes of dyspnea is heart disease. So we have a hunch that that is what it may be.

One might say there is an alcoholic history. Is that going to be important? If this is what I have guessed it to be, that is heart disease, I do not believe it is. I see no definite relation between alcoholic history and heart disease. The past and family history seem irrelevant.

NOTES ON THE PHYSICAL EXAMINATION

We stop over the word "dark skinned." In many cases the fact that we did not has made us miss a diagnosis of Addison's disease. I do not mean to say this is going to be a case of Addison's disease. It is said he is an American but American covers a great variety of races. He might be dark skinned because of exposure to the weather. But we have to keep this possibility of Addison's disease in mind.

"Apex impulse of the heart not seen or felt." Is that important? No, not at his age. At his age it is common owing to the flaring out of the chest walls to see and feel no impulse. So I draw no conclusion from that.

"Right border three centimeters to the right." Insofar as we can trust cardiac percussion, which I do not trust at all, that means an enlarged

heart. It is quite possible that there is an enlarged heart.

"A slight systolic murmur at the apex" as there is in almost every sick man's heart I draw no conclusions from that.

The fact that they do not give the diastolic blood pressure shows how long ago this record was made.

What tentative conclusion should be in our minds about his chest? The first thing is emphysema—barrel chest, hyperresonance, râles. One of the things I have learned is that these signs generally do not mean emphysema. In my textbook on physical diagnosis I said for a good many years that it did. Most people still say that it does. It may be, but the chances are it does not. If not, what is it? It is that change in the chest which almost every elderly person has, barrel chest. So I am perfectly neutral on the question of emphysema.

If that record of shifting dullness is correct he has ascites—part of his dropsy, presumably.

My experience shows that if you do not feel the edge of the liver you can never be sure it is enlarged. I am neutral about the liver.

The surprising thing is that there was no edema of the legs. I expected there would be.

That is from one quarter the normal amount of urine to twice the normal amount.

We begin to suspect that the specific gravity is fixed, that the kidney cannot concentrate urine. We have no proof of that. We have only three examinations. But I begin to think more of disease of the kidney than I did in the beginning. As to the urine, so far as given, it raises a strong suspicion of chronic nephritis, but that is all. Pus is so common in the urine that I can draw no conclusions from it.

We see from the chart that after the first two days he ran a moderate fever until just at the end of life, and that his pulse was ascending on the whole, most of the time above one hundred. His respirations did not ascend until the end. I am expecting some infection in addition to whatever disease of the heart or kidney we may find.

"The day after admission the visiting physician found the first sound valvular and the post-diastolic pause shortened." Ordinarily we hear tic-tac, tic-tac, tic-tac. With shortened diastolic pause we hear tic-tac-tic-tac-tic-tac-tic-tac, with no considerable interval between the two pairs of sounds. It is heard with no particular disease of the heart, but with any failing heart. I have often heard it in pneumonia, and sometimes in Addison's disease, to bring up that possibility once more.

"March 1 the sputum became bloody, the temperature, pulse and respiration rose, and the patient had pain in the right side of the chest." That spells pneumonia to most of us. But we must consider another possibility. Might it not be an infarct of the lung? He possibly has pas-

sive congestion with rupture of the blood vessels. That would give us temperature, pain and bloody sputum. I am considering both pneumonia and pulmonary infarct.

I cannot without more evidence decide about these chest signs. They may be the signs of fluid or solid. We know nothing about the tactile fremitus. I have to remain neutral here.

When we have what looks like a cardiac case and what may be pulmonary infarction we wonder if similar infarctions are not going on in other parts of the body and whether he is getting an embolus in the calf. I think he has a thrombus in that leg, and that helps me to believe that that was an infarct rather than a pneumonia in the lung.

In my experience there is no use counting the cells in these fluids. It does not help you. If it tells you anything it tells you that the fluid has been there some time.

DIFFERENTIAL DIAGNOSIS

In the first place let us deal with the question of Addison's disease. What have we to make us think he has Addison's disease? One thing and one thing only, that is dark skin. I do not think that is enough. His blood pressure is not low. He has had no characteristic gastric symptoms or tendencies to faint. We cannot look in his mouth for confirmation by those dark pigmentations which are much more important in Addison's disease than pigmentation of the skin. We have no evidence of tuberculosis anywhere in the body, and Addison's disease is usually a tuberculosis of the adrenal gland. On the other hand we have a good deal pointing elsewhere. I think it is wise for us to say no. Dr Mallory will not say tuberculosis of the adrenals, or Addison's disease, when he comes to reveal the facts of this case.

We have to explain the main symptoms which occurred before he came to the hospital. There certainly seem to be two acts to this drama that which went on for five months and that which went on after he came to the hospital, the last being the chest signs and the spitting of blood, etc. What happened before he came to the hospital? On the part of the heart, although the evidence is not very good, it seems to point to enlargement. That would go with kidney disease as well as primary heart disease. There is a good deal of evidence of passive congestion both in the chest and in the abdomen. He never had anything to suggest uremia. His nervous system has remained perfectly unchanged. His period of illness has been quite short—five months. Does that help us? I do not think that it does. Chronic heart or kidney disease often comes to the surface just a few months before death. We should like to know more about that urine, the sediment. We should like to know more about the function of the kidney, and we should like to know something about the re-

tained products in the blood. It shows on how insufficient evidence we had to act in those days as compared to what we may have at the best today.

If it is heart trouble, what kind of heart trouble is it? There is no reason to suspect valvular disease. The systolic murmur we get with any kind or no kind of heart disease. If it is heart trouble it is the type which we now believe to be ten times as common as any other—hypertensive heart disease. The rheumatic, syphilitic and coronary forms of heart disease are falling into the background as compared to that. But this man has not got hypertension. Does that prove he has not hypertensive heart disease? No. He may have had hypertension over a period of months or years and then got rid of it. I do not know that he has not got hypertensive heart disease. If he has that, what shall we find post mortem? Hypertrophy and dilatation. If he has kidney disease, what will show in the heart? Very probably a hypertrophied and dilated heart. So even in the end we may not be able to be sure. Most of us believe today that in this combination of cardiovascular-renal disease the sequence of events is something like this: (1) A physical or chemical cause producing hypertension, (2) hypertrophy of the heart, (3) arteriosclerosis—sometimes in the kidney therefore nephritis, perhaps in the coronary vessels, therefore angina, or perhaps failure of the heart without any noticeable arteriosclerosis anywhere, so-called essential hypertension. He might perfectly well have arteriosclerosis at fifty-three. His arteries are thickened at the wrist. That does not prove that they are thickened inside the body.

What about his kidneys? I cannot decide. If we had it to do we could, especially with the test of giving him water to drink and then watching him through the night, to see if the specific gravity of his urine did not vary, as that of an ordinary person does. That was not done here. He had only three tests. If the gravity is not fixed the albumin could come perfectly well from passive congestion as a result of heart disease. I cannot say whether this is kidney disease or not. It may be all heart disease without any kidney.

What about his chest? I think he had infarcts. Did he have lobar pneumonia? No, I believe not. Did he have one of those low-grade pneumonias which the pathologist uses all sorts of queer terms about, as if it were half way between passive congestion and pneumonia? Perhaps. We need to suppose nothing but infarcts and passive congestion of the lung, passive congestion of the other organs, the nutmeg liver, and ascites. The kidneys may show chronic nephritis. I cannot decide. My slight preference is to say that they do not. They will share in the general arteriosclerosis perhaps, but not show more.

Why did he have a leukoerythrocytosis? Why did he have so much fever? I believe they may come from infarcts alone. This is just the sort of case

that often ends with acute pericarditis in which we have no physical signs

A PHYSICIAN How do you explain that sudden pain in the calf?

DR CABOT I suppose that thrombi formed in the calf owing to poor circulation

A PHYSICIAN Would not the amount of urine with the low specific gravity indicate a nephritis?

DR CABOT It certainly tends to. It is not merely the low gravity, but, as you say, the combination with albuminuria. That is a good point. I think it strengthens the evidence for a chronic nephritis.

A PHYSICIAN If he had fluid in the abdomen and little elsewhere, is that not unusual in heart disease?

DR CABOT I should not say it is any more unusual in the edema of heart disease than in the edema of chronic nephritis. If it had been in his face I should be inclined to nephritis. In the abdomen, without the legs, edema is not characteristic of either heart or kidney.

A PHYSICIAN Is portal stasis suggested by edema of the abdomen?

DR CABOT Would you like to suggest that he has cirrhosis of the liver? He has an alcoholic history. Why should he not have cirrhosis of the liver? I do not see any reason why he should not have it. But I do not see why he died. I never saw a death from cirrhosis of the liver with these symptoms. He has never been tapped. I think your point is a perfectly good one. But I do not believe he died of it.

DR B. FRIED How do you explain the loss of weight, twenty-five pounds?

DR CABOT I know nothing about that.

DR FRIED In the presence of ascites you would expect a gain in weight, wouldn't you?

DR CABOT Yes.

DR FRIED Is it possible he has a malignant disease somewhere, perhaps in the lungs, which might give him the ascites, pain in the legs, with metastases in the liver and so on?

DR CABOT That is a good suggestion. Where will you put the primary tumor?

DR FRIED In the lungs.

DR CABOT I see. He spits blood because he has cancer of the lung. These physical signs are due to cancer of the lung. Why did he die?

DR FRIED He died of cachexia.

DR CABOT Is the picture that of a man with cachexia? He is very well nourished. Don't they usually have more local pressure symptoms than he had here? I should say, as far as I know, that they usually show more local pressure symptoms in the lungs when they die of cachexia. We did not find that in this man.

I am betting against cirrhosis of the liver as of any importance in this case, and I am betting against cancer of the lung, although I think they are both good suggestions.

A PHYSICIAN I think he died of a terminal infection, although he had cirrhosis.

DR CABOT Where is the infection?

A PHYSICIAN Probably in the lungs.

DR CABOT Pneumonia?

A PHYSICIAN Yes.

DR ROBERT SLATER Would you have pulsus alternans with a pericarditis?

DR CABOT I do not remember seeing it. It is not characteristic of any one disease. The myocardium degenerates with various diseases. We have not, as far as I remember, any evidence of pulsus alternans here.

A PHYSICIAN It strikes me that this man is rather young to have hypertensive heart disease. I think it might be in the rheumatic group, and it might be a case of subacute bacterial endocarditis. That would explain the fever, the leukocytosis, and so forth.

DR CABOT You are perfectly right. Most people dying of hypertensive heart trouble usually die at a later period. Subacute bacterial endocarditis would account for the leukocytosis and fever. But then I think the patient should show evidence of fever for a longer period. We call the disease subacute, but it is often chronic. Bacterial endocarditis usually runs for a much longer period than this patient suffered. He has some emboli. Very possibly that might go with bacterial endocarditis. On the whole I am voting against it though.

I will commit myself once more. I do not believe it is cancer of the lung. I do not believe it is cirrhosis of the liver or subacute bacterial endocarditis. I do not know whether it is heart disease, kidney disease, or both. But I am inclined, with the suggestion that one of you gentlemen made, to say there is nephritis. Yes, I think this man has chronic nephritis with a hypertrophied and dilated heart, with secondary to that. If he had cirrhosis it did not amount to enough to cause his death. As to terminal infection, I do not know what it is. I am rather inclined to think he did not have any.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Cardiorenal disease

Pneumonia.

Thrombosed leg vein

DR. RICHARD C. CABOT'S DIAGNOSIS

Probably chronic nephritis with hypertrophy and dilatation of the heart

Ascites

ANATOMIC DIAGNOSES

1 Primary fatal lesions

Fibrous myocarditis

Thrombi in the ventricles and auricles of the heart.

2 Secondary or terminal lesions

Pulmonary embolism and thrombosis

Hypertrophy and dilatation of the heart

Chronic passive congestion, general.

Infarcts of the lungs
Cystitis, pyelitis and ureteritis
Slight fatty metamorphosis of the liver

3 Historical landmarks

Chronic pleuritis
Slightly defective closure of the foramen ovale
Hyperplasia of the medulla of the kidneys
Infarcts of the kidneys
Slight chronic interstitial nephritis
Papillary adenomata of the kidneys
Tenia
Concretions in the kidney

DR TRACY B MALLORY The pigmentation of the skin mentioned in the case is explained by the fact that the man was a mulatto

The heart was considerably enlarged weighing 665 grams

A PHYSICIAN What would be the normal weight of the heart for this man?

DR MALLORY About 350 to 375 I should judge All the cavities were dilated The important finding was a very large area of necrosis, in part fairly fresh, in part healed fibrous tissue, occupying most of the inferior portion of the interventricular septum and some of the lateral wall of the left ventricle Thrombi had formed on the endocardial surfaces, both in the right and in the left ventricle These had led to numerous infarcts in the lung, including a terminal pulmonary embolus which was sufficient to obstruct both branches of the pulmonary artery I presume that the lesion in the leg was also an embolus from the thrombi in the left ventricle, but the leg was not dissected, so we have no proof of that

The difficulty comes in explaining this area of fibrosis, which, as described, seems like a typical cardiac infarct The coronary arteries showed almost no traces of atheroma, and no thrombi were found. I know from bitter experience that thrombi in the coronary arteries are often missed by the pathologist It is possible that that may have been the case here The only other reasonable hypothesis seems to be that the lesion might have been a gumma Syphilitic lesions of this size in the heart are, however, extremely rare, and no other evidence of syphilis was found anywhere else in the body On the whole I am inclined to believe it was not that

The kidneys were very unusual in their microscopic structure The condition was apparently a congenital abnormality in which the calices were extremely long and extended up into areas of the cortex where they do not ordinarily reach There were corresponding changes in the arrangement of the various tubular structures, but numerous small irregular scattered areas showing foci of lymphocytic infiltration were found suggesting old healed infarctions There was a very little arteriosclerosis in the kidneys and no

lesions of the glomeruli that definitely could be called nephritis

So that the immediate cause of death seems to have been a pulmonary embolus, and the most important lesion, at the base of everything this area of infarction of the heart with the subsequent thrombus formation There was no evidence of any terminal infection

DR CABOT Were the lesions in the kidney enough to interfere with its function much, or do you think it was a pretty good functioning kidney?

DR MALLORY I have never seen an anomalous kidney of this type before I do not know whether it is characteristic of them to show any decreased function or not

DR CABOT Was the liver all right?

DR MALLORY It showed chronic passive congestion, nothing else

CASE 14062

AN ABDOMINAL CASE WITH UNFORTUNATE COMPLICATIONS

SURGICAL DEPARTMENT

A married Canadian woman fifty-seven years old entered the hospital November 15 complaining of a "growth in her side"

For six years she had had increasing discomfort in the lower left side and a dull constant ache in the lower left abdomen occasionally radiating to the left shoulder and aggravated by lying on the left side, standing and walking Two years before admission she had diarrhea for two weeks During the past summer she passed small clots of blood in stools several times For eight weeks there had been no blood in the stools and her bowels, previously regular with an occasional cathartic, had not moved without enemas, which gave her much pain During the past five weeks the pain had been much worse, her appetite had been poor and she thought she had lost five or six pounds

For two years beginning nine years before admission she had continual flowing and pain in the pelvic region She had a curettage done Two months after her discharge from the hospital the flowing recurred, with pain and leukorrhea Six years before admission her uterus, tubes and one ovary were removed She had slight dyspnea on exertion and edema of the ankles at night, disappearing by morning For several years she had urinated twice at night and for several months every hour by day

Her mother died of diabetes and Bright's disease, her father of carcinoma of the bladder

Clinical examination showed an obese, short-necked woman Breath sounds faint Fine moist inspiratory rales at the right apex in front and over the whole of both lungs posteriorly Abdomen midline suprapubic operative scar, thick panniculus, general hyperesthesia on the left side, the slightest pressure causing pain Very

marked voluntary spasm No masses made out Pelvic examination showed a bilateral tear of the cervix, some tenderness in the left vault Rectal examination, extremities, pupils and reflexes normal

Before operation chart not remarkable Amount and specific gravity of urine not recorded, findings negative except for occasional leukocytes in the sediment of both of two specimens and rare red blood cells in one (No catheter specimen) Blood before operation 4,000 leukocytes, 44 per cent polynuclears, 56 per cent lymphocytes, the majority mature, hemoglobin 80 per cent, reds 5,200,000, marked anisocytosis Smear showed leukopenia also Stool, guaiac positive Wassermann negative

A barium enema passed to the midportion of the sigmoid, where it apparently met with obstruction At this point the patient expelled the enema and the degree of obstruction could not be definitely determined The lesion was poorly shown The diaphragm was high on both sides, rather sharply domed on the right Its outline was distinct The costophrenic sinus was not obliterated The lung fields were clear There were no mediastinal masses

November 22 operation was done, and November 30 a second operation After the second the pulse was thready and rapid and she looked ill December 3 and 4 she had chills with a temperature of 101° December 7 500 cubic centimeters of blood was transfused, and December 8 600 cubic centimeters December 13 the temperature was 103° December 14 the condition was worse There was marked phlebitis of the left leg The temperature was 103 8° That day she died

DISCUSSION

BY LINCOLN DAVIS, M D

The way is not easy for the surgical transgressor in this hospital Every surgical failure is revealed first at the surgical staff meeting, and then if there happens to be a post-mortem we are summoned here to explain This case is a painful one to me

The description of discomfort and pain in the left side in this case is unusual It would not indicate a growth If it were on the right side we should be suspicious of something the matter with the gall-bladder

The story of blood in the stools of a woman of fifty-seven, constipation, pain on taking an enema, and loss of weight is all suggestive of a growth in the bowel But the duration of symptoms for six years is misleading She certainly had not had a growth in the bowel for six years The record does not state what the condition was at the time of the operation six years ago Rectal examination was negative

Here was a case in which the clinical diagnosis was fairly clear The X-ray confirmed it

INTERPRETATION OF X-RAY

The findings are probably due to carcinoma of the sigmoid

PRE OPERATIVE DIAGNOSIS NOVEMBER 22

Carcinoma of the sigmoid

FIRST OPERATION

Gas ether Median suprapubic incision A scirrhus growth of the lower sigmoid was found with a few large hard glands in the mesentery The liver was normal to palpation About six inches of intestine including the growth was removed with a V-shaped piece of mesentery including the enlarged glands A lateral anastomosis was then done with some difficulty Clamps could not be used An incision was made in the right iliac fossa and a catheter inserted into the cecum by the Witzel method The median wound was closed without drainage

PATHOLOGICAL REPORT

A section of large intestine 12 5 centimeters long with the adjacent mesentery Midway between the cut ends there is an annular flat superficially ulcerated growth measuring 3 5 centimeters in length There are no enlarged lymph nodes in the attached mesentery

Microscopic examination of the growth shows a structure of irregular gland tubules lined by atypical columnar epithelial cells which invade the muscular coats One small mesenteric lymph node is negative Adenocarcinoma

FURTHER DISCUSSION

This seemed to be a very favorable growth for resection It was scirrhus, it was perfectly movable It was however rather low, so that it was difficult to manipulate it outside the abdomen The anastomosis was made with some dif-

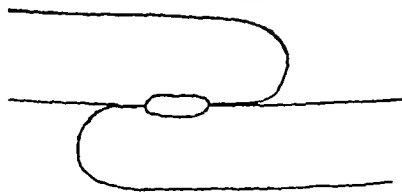


FIGURE 1

iculty, and instead of being the usual lateral anastomosis where the bowels are united as in Figure 1, in this case the bowels were united as in Figure 2 That is not the best way to do it, but strangely enough it was impossible to bring the segments together in the usual way on ac-

count of the pull of the mesentery, which was very short. Often a union in this way is perfectly satisfactory, but in this case it proved

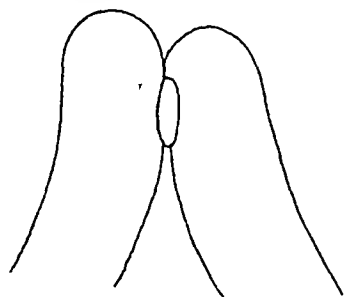


FIGURE 2

to be deficient. The report of the operation states that there were enlarged glands. That is not borne out by the pathologist's report. It was a very favorable case for excision. The cecostomy was done to prevent tension on the anastomosis. It worked well.

She did not do well after operation. The abdomen became distended in spite of the cecostomy, and she vomited from time to time. Gradually her pulse and temperature went up and the peristalsis which was present at first was absent. At the end of eight days it was evident that she had peritonitis. She was very tender in her left flank.

SECOND OPERATION

Under novocain anesthesia in the ward an incision was made in the left flank and the peritoneal cavity opened with the escape of a moderate amount of thick foul smelling fluid. The intestines were found matted together with a heavy fibrinous exudate. A tube was inserted into the flank.

FURTHER DISCUSSION

She drained an enormous amount of foul fluid from this wound. The distention diminished somewhat, and we thought she was a little better. On the night of December 13 there was profuse bleeding from the cecostomy. She failed very rapidly after this.

This case does not present much of a problem in diagnosis. The diagnosis of carcinoma of the sigmoid was quite plain. Also it was evident that there was peritonitis following operation. One problem was the profuse bleeding from the cecostomy. I could not account for that at the time. I think the post mortem report will explain it.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of sigmoid
Partial intestinal obstruction

ANATOMIC DIAGNOSES

1 Primary fatal lesion

(Carcinoma of the sigmoid)

2 Secondary or terminal lesions

Sigmoidectomy

Colostomy

General peritonitis

Infarction of the ileum?

3 Historical landmarks

Chronic cystitis

Chronic proctitis

DR TRACY B. MALLORY: The necropsy showed a terminal peritonitis with comparatively little free fluid but many pockets of fibrinopurulent exudate, especially in the left lower quadrant, where the lateral anastomosis had broken apart and was the direct cause of the peritonitis. The lower portion of the ileum and part of the large intestine showed a hemorrhagic infarction, and the mesenteric vein showed a fresh thrombosis. So that that undoubtedly is the source of the hemorrhage.

DR CABOT: Can you say anything as to the source of the thrombosis?

DR MALLORY: It is probably secondary to the peritonitis.

DR DAVIS: This was a case of technical failure,—the failure to get a tight union of the bowel.

DR J. B. AYER: What kind of suture do you use now?

DR DAVIS: We use chromic catgut. But the trouble here was that there was a little tension, and a little tension will make the sutures cut out, and if one suture cuts out with a little sepsis the whole thing will go. Probably if we had inserted a drain on that side it might have prevented peritonitis. If one drains an intestinal suture it is almost sure to leak. If one does not drain and it does leak we get peritonitis. We usually wrap omentum around the suture line and leave it, and that is what we did in this case, but it was not enough.

METHODS OF USING OUR CASE RECORDS IN THE REGULAR MEETINGS OF MEDICAL GROUPS IN ARIZONA AND MASSACHUSETTS

I

Two of the many methods of using the Case Records have proved so successful that they deserve to be better known. One has been developed by the staff of the Newton Hospital, Newton, Massachusetts; the other by the Yavapai County Medical Society, Arizona. Both are products of a number of years of evolution. Both owe much to the experimental method. True offspring of progressive science, they have both proved

marked voluntary spasm. No masses made out. Pelvic examination showed a bilateral tear of the cervix, some tenderness in the left vault. Rectal examination, extremities, pupils and reflexes normal.

Before operation chart not remarkable. Amount and specific gravity of urine not recorded, findings negative except for occasional leukocytes in the sediment of both of two specimens and rare red blood cells in one. (No catheter specimen.) Blood before operation 4,000 leukocytes, 44 per cent polynuclears, 56 per cent lymphocytes, the majority mature, hemoglobin 80 per cent, reds 5,200,000, marked anisocytosis. Smear showed leukopenia also. Stool, guaiac positive. Wassermann negative.

A barium enema passed to the midportion of the sigmoid, where it apparently met with obstruction. At this point the patient expelled the enema and the degree of obstruction could not be definitely determined. The lesion was poorly shown. The diaphragm was high on both sides, rather sharply domed on the right. Its outline was distinct. The costophrenic sinus was not obliterated. The lung fields were clear. There were no mediastinal masses.

November 22 operation was done, and November 30 a second operation. After the second the pulse was thready and rapid and she looked ill. December 3 and 4 she had chills with a temperature of 101°. December 7 500 cubic centimeters of blood was transfused, and December 8 600 cubic centimeters. December 13 the temperature was 103°. December 14 the condition was worse. There was marked phlebitis of the left leg. The temperature was 103.8°. That day she died.

DISCUSSION

BY LINCOLN DAVIS, M.D.

The way is not easy for the surgical transgressor in this hospital. Every surgical failure is revealed first at the surgical staff meeting, and then if there happens to be a post-mortem we are summoned here to explain. This case is a painful one to me.

The description of discomfort and pain in the left side in this case is unusual. It would not indicate a growth. If it were on the right side we should be suspicious of something the matter with the gall bladder.

The story of blood in the stools of a woman of fifty-seven, constipation, pain on taking an enema, and loss of weight is all suggestive of a growth in the bowel. But the duration of symptoms for six years is misleading. She certainly had not had a growth in the bowel for six years. The record does not state what the condition was at the time of the operation six years ago. Rectal examination was negative.

Here was a case in which the clinical diagnosis was fairly clear. The X-ray confirmed it.

INTERPRETATION OF X-RAY

The findings are probably due to carcinoma of the sigmoid.

PRE-OPERATIVE DIAGNOSIS NOVEMBER 22

Carcinoma of the sigmoid

FIRST OPERATION

Gas ether. Median suprapubic incision. A scirrhus growth of the lower sigmoid was found with a few large hard glands in the mesentery. The liver was normal to palpation. About six inches of intestine including the growth was removed with a V-shaped piece of mesentery including the enlarged glands. A lateral anastomosis was then done with some difficulty. Clamps could not be used. An incision was made in the right iliac fossa and a catheter inserted into the cecum by the Witzel method. The median wound was closed without drainage.

PATHOLOGICAL REPORT

A section of large intestine 125 centimeters long with the adjacent mesentery. Midway between the cut ends there is an annular flat superficially ulcerated growth measuring 3.5 centimeters in length. There are no enlarged lymph nodes in the attached mesentery.

Microscopic examination of the growth shows a structure of irregular gland tubules lined by atypical columnar epithelial cells which invade the muscular coats. One small mesenteric lymph node is negative. Adenocarcinoma.

FURTHER DISCUSSION

This seemed to be a very favorable growth for resection. It was scirrhus, it was perfectly movable. It was however rather low, so that it was difficult to manipulate it outside the abdomen. The anastomosis was made with some difficulty,

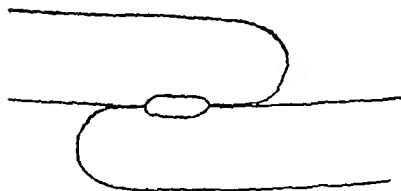


FIGURE 1

and instead of being the usual lateral anastomosis where the bowels are united as in Figure 1, in this case the bowels were united as in Figure 2. That is not the best way to do it, but strangely enough it was impossible to bring the segments together in the usual way on ac-

count of the pull of the mesentery, which was very short. Often a union in this way is perfectly satisfactory, but in this case it proved

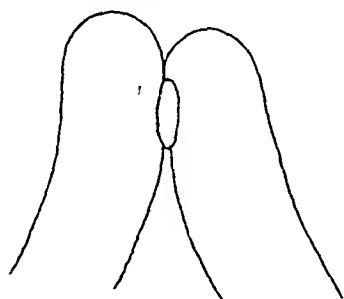


FIGURE 2

to be deficient. The report of the operation states that there were enlarged glands. That is not borne out by the pathologist's report. It was a very favorable case for excision. The cecostomy was done to prevent tension on the anastomosis. It worked well.

She did not do well after operation. The abdomen became distended in spite of the cecostomy, and she vomited from time to time. Gradually her pulse and temperature went up and the peristalsis which was present at first was absent. At the end of eight days it was evident that she had peritonitis. She was very tender in her left flank.

SECOND OPERATION

Under novocain anesthesia in the ward an incision was made in the left flank and the peritoneal cavity opened with the escape of a moderate amount of thick foul smelling fluid. The intestines were found matted together with a heavy fibrinous exudate. A tube was inserted into the flank.

FURTHER DISCUSSION

She drained an enormous amount of foul fluid from this wound. The distention diminished somewhat, and we thought she was a little better. On the night of December 13 there was profuse bleeding from the cecostomy. She failed very rapidly after this.

This case does not present much of a problem in diagnosis. The diagnosis of carcinoma of the sigmoid was quite plain. Also it was evident that there was peritonitis following operation. One problem was the profuse bleeding from the cecostomy. I could not account for that at the time. I think the post mortem report will explain it.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of sigmoid
Partial intestinal obstruction

ANATOMIC DIAGNOSES

- 1 *Primary fatal lesion*
(Carcinoma of the sigmoid)
- 2 *Secondary or terminal lesions*
Sigmoidectomy
Colostomy
General peritonitis
Infarction of the ileum?
- 3 *Historical landmarks*
Chronic cystitis
Chronic proctitis

DR TRACY B. MALLORY: The necropsy showed a terminal peritonitis with comparatively little free fluid but many pockets of fibrinopurulent exudate, especially in the left lower quadrant, where the lateral anastomosis had broken apart and was the direct cause of the peritonitis. The lower portion of the ileum and part of the large intestine showed a hemorrhagic infarction, and the mesenteric vein showed a fresh thrombosis. So that that undoubtedly is the source of the hemorrhage.

DR CABOT: Can you say anything as to the source of the thrombosis?

DR MALLORY: It is probably secondary to the peritonitis.

DR DAVIS: This was a case of technical failure,—the failure to get a tight union of the bowel.

DR J. B. AYER: What kind of suture do you use now?

DR DAVIS: We use chromic catgut. But the trouble here was that there was a little tension, and a little tension will make the sutures cut out, and if one suture cuts out with a little sepsis the whole thing will go. Probably if we had inserted a drain on that side it might have prevented peritonitis. If one drains an intestinal suture it is almost sure to leak. If one does not drain and it does leak we get peritonitis. We usually wrap omentum around the suture line and leave it, and that is what we did in this case, but it was not enough.

METHODS OF USING OUR CASE RECORDS IN THE REGULAR MEETINGS OF MEDICAL GROUPS IN ARIZONA AND MASSACHUSETTS

I

Two of the many methods of using the Case Records have proved so successful that they deserve to be better known. One has been developed by the staff of the Newton Hospital, Newton, Massachusetts, the other by the Yavapai County Medical Society, Arizona. Both are products of a number of years of evolution. Both owe much to the experimental method. True offspring of progressive science, they have both proved

their adaptation to life by maintaining a notable degree of enthusiasm in the meetings through an unusual number of years. The Westerners have with great ingenuity developed a teamplay method which has the zest of a game,—all the stimulus of competition with the minimum of its disadvantages. For the benefit of the many other groups in which the Case Records are used from handfuls of students in their rooms to formal meetings of hospital staffs and medical societies, we report these two methods. Whatever is lasting, like whatever is popular is worthy of attention.

"Several years ago," writes Dr. George L. West of Newton, "I subscribed to the Cases, before their appearance in *The Boston Medical and Surgical Journal*. I soon became impressed with the practicability of using the cases in a clinical club. I then asked a few members of the staff to fit into the discussion.

"It has now become my practice to select such cases as lend themselves intrinsically to discussion and argument. There are generally two for each meeting. No member knows the date of the original issue of the cases except myself. The stenographer sends a multigraphed copy of the case minus the discussion and the post-mortem findings to the members several days in advance of the meeting. Two members are named as principals. Each principal presents his case as he pleases and defends himself in his discussion against the questions and objections which arise plentifully as he proceeds. He then makes his diagnosis and the other members criticize and finally each man registers his opinion as to diagnosis. I then read to the club your discussion and diagnosis and the necropsy findings, which are then for the first time made known to the members.

"You will see that the club has had a continuous existence for several years. It now has a membership of thirty men and an average attendance of about twenty at its bimonthly meetings at the hospital.

"I modestly believe that the benefit from this particular method of study has been of positive effect in elevating the standard of medical practice at the hospital and in the city.

"It is a tribute to your development of the case method that a clinical club such as I have described can carry on with so much enthusiastic interest and benefit."

II

The western society has worked out a rather elaborate team system, described by Dr. C. E. Yount and Dr. Gale D. Allee in an article in *Southwestern Medicine*.* By permission we publish extracts from this report of a most original and picturesque plan of work, full of the spirit of youth, its comradeship, its love of a game. In its earliest form it was started after nine years of experiment with various other

plans of work. At the end of the first year the society felt that it had gained "more real benefit and more stimulus to better work from the systematic study of the Cabot Clinics than from any other method we have ever pursued." At the end of five more years there is still the vigorous growth of youth. The experience of the society has shown increased interest and harder study every year.

"In 1921 the members of the Yavapai County Medical Society residing in Prescott, in conjunction with the Medical Officers on duty in the U. S. V. B. Hospital at Fort Whipple determined to institute a course of post graduate study.

"After discussing various plans it was decided to use the Case Records of the Massachusetts General Hospital. Time has proved that our selection of the Cabot case histories was a wise choice. There is no other system of case records published which can be so readily adjusted to the plan of study which we have developed.

"During the past six years many schemes for presenting the Cabot cases have been tried out in an effort to improve our method and make our study more interesting. The changes which have resulted in an improved plan have been retained, the others dropped, and while we may not have attained standardization, we trust that we are rapidly approaching it. Certainly each year has shown increased interest and closer study on the part of the participants. The method used during the past year is the fruit of mature experience and the end result of six years of evolution.

"At the beginning of the year all the doctors in the Yavapai County Medical Society and at Whipple are divided into three groups balanced as equally as possible as to the professional attainments, specialties and ability to 'talk on their feet'. Each group elects a leader or team captain.

At the remaining nine meetings two of the three groups, in rotation, meet each other in competition in the presentation of Cabot case histories, until each group has discussed six cases. The two competing groups are each given a case history, the two being as nearly equal in difficulty of solution as possible. The competitors are graded on the skill with which the case is presented and the accuracy of their diagnosis as compared with Dr. Cabot's and the necropsy findings.

"Each group is allowed thirty minutes, neither more nor less, for the discussion of the case assigned by the judges. The captain of each group decides as to how the case shall be presented by his group and who shall speak for his group. The only restriction placed upon him is that his group may not exceed thirty minutes and he must call upon each of his various group members an equal number of times in the year. After a group has concluded its discussion one of the judges reads the discussion of Dr. Cabot and the report of the necropsy findings after

which the judges retire and prepare their rating of the group. The judges, three in number, are chosen at the beginning of the course and serve for one year.

"The grades given by the judges at each meeting are placed in a sealed envelope, which is then given into the custody of the secretary, who retains them until the end of the year when they are all delivered to the judges, who determine the winning group. The judges are also custodians of the *Boston Medical Journal* as it is received through the mail, and are charged with the duty of selecting the cases for discussion, having them mimeographed and distributed to members two weeks in advance of the meeting.

"Immediately after the close of the course of study an annual banquet is held at which it is needless to add, the attendance is 100 per cent. After dinner each group captain is requested to tell how and why his group won. Then the Chairman of the board of judges announces the winning group. The two losing groups pay for the dinner. The winning group is, therefore, the guest of the two good losers. This year the winning group won by 11/100 of one per cent and the lowest group was within one and one-half per cent of the winner.

RESULTS

(1) This year we had an average of twenty-one doctors at each meeting, or a general average of 99.5 per cent attendance for the three groups for the series of winter meetings. We mention with considerable pride this remarkable percentage for attendance and present it as evidence that we have developed an interesting plan for postgraduate work.

(2) Men who at the beginning of the course could not get up on their feet and talk because of stage fright are now consuming the full time allotted to them, discussing their cases with zeal and enthusiasm.

(3) The division of the doctors into well balanced groups and placing these groups in competition with each other is believed to be an important feature of the scheme for study which we have developed, because it promotes fellowship and good feeling, a wonderful degree of cooperation, and stimulates each individual in the group to engage in close study in order that he may carry his share of the group burden.

(4) Last, but most important of all, this course of study has taught us carefully to evaluate and draw logical deductions from the data available, and we are confident that this training has made better doctors of all of us.

CONCLUSION

"For nine evenings each winter since 1921 we have, figuratively speaking, transported Dr. Richard C. Cabot and his colleagues from the Massachusetts General Hospital, Boston, to

Prescott, Arizona, at no greater cost than a subscription to the published Cabot Clinics, or the *Boston Medical and Surgical Journal*, plus the effort necessary to operate the plan just described. The effort would have been abortive years ago were it not for the fact that we have at Fort Whipple and in our County Society doctors with a genuine thirst for medical knowledge, a determination 'to know what others have known' and what others know, coupled with a will to do and an inherent compatibility which enables us to work together as a guild."

Southwestern Medicine announces that reports of these case discussions of the Yavapai County Medical Society are to be made a regular feature of that journal, commends the method to all county societies, and adds, "Such a type of meeting will be far more helpful in the development of diagnostic ability, clinical analysis, and management of patients than listening to any number of papers, no matter how eminent the authors may be."

The lasting good results of both these methods of using the Case Records are obviously due to the progressive mental attitude of the men who have developed them. Each plan has its advantages. The Massachusetts method gives every man an opportunity to enter into the discussion at each meeting, and each one must take his turn in rotation as principal. Only one judge is cut off from the advantages of study and discussion of cases, instead of three as in Arizona. The more informal discussion often leads to valuable side issues, and is carried on with the greatest ardor. In Arizona esprit de corps maintains the standard of the group, and the year's work is a year's game. We present these two plans as full of suggestions for committees harassed with the problems of languishing societies or unproductive staff meetings.

ANOTHER VITAMIN

Dr. Herbert M. Evans of the Department of Anatomy of the University of California is reported to have claimed that he has discovered a vitamin to which he has applied the designation F.

According to the views of Dr. Evans this vitamin is essential for the normal growth of animals and especially for the development of sexual faculties. "Three years work with rats and guinea pigs were presented in this study."

Dr. George C. Burr now with the University of Minnesota was associated with Dr. Evans in this study.

Further studies are in progress with the purpose of ascertaining what foods will provide vitamin F.

their adaptation to life by maintaining a notable degree of enthusiasm in the meetings through an unusual number of years. The Westerners have with great ingenuity developed a teamplay method which has the zest of a game,—all the stimulus of competition with the minimum of its disadvantages. For the benefit of the many other groups in which the Case Records are used from handfuls of students in their rooms to formal meetings of hospital staffs and medical societies, we report these two methods. Whatever is lasting, like whatever is popular is worthy of attention.

"Several years ago," writes Dr. George L. West of Newton, "I subscribed to the Cases, before their appearance in *The Boston Medical and Surgical Journal*. I soon became impressed with the practicability of using the cases in a clinical club. I then asked a few members of the staff to fit into the discussion.

"It has now become my practice to select such cases as lend themselves intrinsically to discussion and argument. There are generally two for each meeting. No member knows the date of the original issue of the cases except myself. The stenographer sends a multigraphed copy of the case minus the discussion and the post-mortem findings to the members several days in advance of the meeting. Two members are named as principals. Each principal presents his case as he pleases and defends himself in his discussion against the questions and objections which arise plentifully as he proceeds. He then makes his diagnosis and the other members criticize and finally each man registers his opinion as to diagnosis. I then read to the club your discussion and diagnosis and the necropsy findings, which are then for the first time made known to the members.

"You will see that the club has had a continuous existence for several years. It now has a membership of thirty men and an average attendance of about twenty at its bimonthly meetings at the hospital.

"I modestly believe that the benefit from this particular method of study has been of positive effect in elevating the standard of medical practice at the hospital and in the city.

"It is a tribute to your development of the case method that a clinical club such as I have described can carry on with so much enthusiastic interest and benefit."

II

The western society has worked out a rather elaborate team system, described by Dr. C. E. Yount and Dr. Gale D. Allee in an article in *Southwestern Medicine**. By permission we publish extracts from this report of a most original and picturesque plan of work, full of the spirit of youth, its comradeship, its love of a game. In its earliest form it was started after nine years of experiment with various other

plans of work. At the end of the first year the society felt that it had gained "more real benefit and more stimulus to better work from the systematic study of the Cabot Clinics than from any other method we have ever pursued." At the end of five more years there is still the vigorous growth of youth. The experience of the society has shown increased interest and harder study every year.

"In 1921 the members of the Yavapai County Medical Society residing in Prescott, in conjunction with the Medical Officers on duty in the U. S. V. B. Hospital at Fort Whipple determined to institute a course of post graduate study.

"After discussing various plans it was decided to use the Case Records of the Massachusetts General Hospital. Time has proved that our selection of the Cabot case histories was a wise choice. There is no other system of case records published which can be so readily adjusted to the plan of study which we have developed.

"During the past six years many schemes for presenting the Cabot cases have been tried out in an effort to improve our method and make our study more interesting. The changes which have resulted in an improved plan have been retained, the others dropped, and while we may not have attained standardization, we trust that we are rapidly approaching it. Certainly each year has shown increased interest and closer study on the part of the participants. The method used during the past year is the fruit of mature experience and the end result of six years of evolution.

"At the beginning of the year all the doctors in the Yavapai County Medical Society and at Whipple are divided into three groups balanced as equally as possible as to the professional attainments, specialties and ability to 'talk on their feet'. Each group elects a leader or team captain. At the remaining nine meetings two of the three groups, in rotation meet each other in competition in the presentation of Cabot case histories, until each group has discussed six cases. The two competing groups are each given a case history, the two being as nearly equal in difficulty of solution as possible. The competitors are graded on the skill with which the case is presented and the accuracy of their diagnosis as compared with Dr. Cabot's and the necropsy findings.

"Each group is allowed thirty minutes, neither more nor less, for the discussion of the case assigned by the judges. The captain of each group decides as to how the case shall be presented by his group and who shall speak for his group. The only restriction placed upon him is that his group may not exceed thirty minutes and he must call upon each of his various group members an equal number of times in the year. After a group has concluded its discussion one of the judges reads the discussion of Dr. Cabot and the report of the necropsy findings after

operations of our chief federal health agency, producing greater results for each dollar spent, and it is therefore of considerable significance to national vitality and ought to be enacted into law

The chief provisions of the Jones Parker bill are those for the detail of officers or employees of the Public Health Service to other bureaus on request of the head of an executive department, detail of personnel to research and educational institutions, better facilities for the Hygienic Laboratory, a commissioned status for the sanitary engineers and other non-medical scientific personnel of the service, better adjustment of grades of medical and other commissioned officers, establishment of a nurse corps, and creation of a national advisory health council

Indorsement for the principles of the Jones-Parker bill has come from the American Medical Association, New York Academy of Medicine, American Public Health Association Conference of State Health Officers, U S Chamber of Commerce and other bodies. It is the first measure providing for federal health correlation which has received unanimous support from the medical and public health professions. Physicians who are interested in progress in this important field would do well to communicate with their Senators and urge the adoption of the Jones bill, S 3356, in the Senate

HELP FIGHT CANCER IN MASSACHUSETTS, APRIL 23-27 1928

PLANS are under way for a state-wide educational campaign looking toward a reduction in the deaths from cancer through early discovery of the disease. The campaign will be held during the week of April 23-27th under the joint auspices of the cancer committee of the Massachusetts Medical Society, of which Dr Robert B. Greenough is Chairman, the Massachusetts Branch of the American Society for the Control of Cancer represented by Dr Franklin G. Balch, and the State Department of Public Health represented by the Commissioner.

It is the aim of the joint committee to bring simultaneously before all citizens of the Commonwealth a few essential facts regarding signs of early cancer and pre-cancerous conditions in order that those who might otherwise become victims of the disease may act in time for the successful application of treatment. While an unfortunately large number of cases of cancer are in view of our present knowledge hopeless, it is well known that many others give promise of permanent cure if they can be brought to attention and effectively treated before they are too far advanced. The average delay at the present time between the discovery of the disease and the first visit of the patient to a physician is eight months. There is a still further delay of two months before effective treatment is applied.

These ten months of delay must be appreciably shortened before progress can be made in the control of cancer.

The chief lines of activity which will be followed during the proposed campaign in each of the clinic cities are these:

1. An open meeting in which the medical profession and the public will unite.

2. A medical meeting with clinical session, if possible, arranged by the medical society and the local cancer committee.

3. Talks by physicians before organizations whose regular meetings fall between April 23-April 27th.

4. An approach to industrial groups by means of pay envelope inserts or articles in house organs and to householders by bill enclosures.

5. Newspaper publicity both before and after the occurrence of the various events.

This program in the cities participating has been arranged to date as follows:

Boston

On Monday, April 23rd, in Boston, the campaign will be opened by a mass meeting in Symphony Hall at which the Governor will speak, Cardinal O'Connell is expected also to be present. Other speakers will be Surgeon-General Hugh S. Cumming of the U S P H. S., Dr W. A. Evans, of Chicago, well-known writer on health subjects and Dr Richard Cabot.

The Boston City Club will devote a session to the subject of cancer.

The Chamber of Commerce has agreed to do the same, probably on Wednesday, April 25th.

Speakers will also be placed before many other organizations during the week.

Pondville

On Tuesday, April 24th, a clinical session for physicians will be held at the Pondville Hospital, with Dr. Joseph Colt Bloodgood as visiting consultant.

On Thursday, April 26th, at one o'clock the regular clinic will be held.

On Friday, April 27th the Hospital Visiting Committee is arranging an open house at the Hospital for friends in neighboring towns.

Springfield

On Monday, April 23rd, a public meeting will be held at which Dr. Ernest Amory Codman of Boston will be the principal speaker. On Friday, April 27th, a luncheon meeting will be held. Dr. Howard Canning Taylor will speak.

Worcester

On Tuesday, April 24th, in the evening, a mass meeting will be held at the Armory, with Dr. Bloodgood as the principal speaker.

The New England Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY
under the jurisdiction of the following named committee

For Three Years

JOHN W. BARTOL, M.D. FREDERICK T. LORD, M.D.
CHARLES BROTHMAN, M.D.

For Two Years

HOMER GAGE, M.D. Chairman EDWARD C. STREETER, M.D.
EDWARD W. TAYLOR, M.D.

For One Year

WILLIAM H. ROBERT, JR., M.D. ROBERT B. OSGOOD, M.D. ROGER I. LEE, M.D.

EDITORIAL STAFF

DAVID L. EDWALL, M.D. STEPHEN RUSHMORE, M.D.
RUD. HUNT, M.D. HANS ZIEGLER, M.D.
JOHN P. SUTHLAND, M.D. BENJAMIN WHITE, PH.D.
GEORGE R. MINOT, M.D. HENRY R. VIETS, M.D.
FRANK H. LAHEY, M.D. ROBERT N. NYE, M.D.
SHIELDS WARREN, M.D.

WALTER P. BOWERS, M.D. Managing Editor

ASSOCIATE EDITORS

GEORGE G. SMITH, M.D. WILLIAM B. BREED, M.D.
JOSEPH GARLAND, M.D.

THE NEW HAMPSHIRE MEDICAL SOCIETY

PUBLICATION COMMITTEE

D. E. SULLIVAN, M.D. EMERY M. FITCH, M.D.
JOSEPH J. COBB, M.D.

THE VERMONT STATE MEDICAL SOCIETY

PUBLICATION COMMITTEE

WILLIAM G. RICKER, M.D. C. F. DALTON, M.D.
J. A. WARR, M.D.

SUBSCRIPTION TERMS \$5.00 per year in advance postage paid
for the United States Canada \$7.00 per year \$3.50 per year
for all foreign countries belonging to the Postal Union

Material for early publication should be received not later
than noon on Saturday. Orders for reprints must be sent to
the Journal office 126 Massachusetts Avenue

The Journal does not hold itself responsible for statements
made by any contributor

Communications should be addressed to The New England
Journal of Medicine 126 Massachusetts Avenue Boston Mass

NOTHING TOO MUCH

ALTHOUGH the increasing mortality from diabetes has been checked by insulin, the increasing incidence of the disease gives cause for alarm. Statistical accounts of the annual per capita consumption of sugar in the United States indicate that we are far ahead of other countries in this respect. Insurance companies have been pointing out that overweight and especially obesity are accompanied by decreased expectancy of life. For these and other reasons "your fat friend" has become a term of deep reprobatation and especially among women has a svelt figure become one of the objects of existence.

The pursuit of this ideal is attended by a certain amount of risk and that the danger is real is held by Knopf.¹ His views, expressed last year² find confirmation in statistics recently collected. He finds that in young women between the age of 16 and 19 there is nearly twice as high a mortality from tuberculosis than among boys of the same age in New York. Figures from Wisconsin, Baltimore, and Cleveland indicate a

similar situation in those communities "In view of the claims that the general morbidity and mortality of tuberculosis have been decreased by more than 50% during the last thirty years, these comparative reports are depressing."

There are undoubtedly several factors at work. In some respects women's dress is more hygienic than it was thirty years ago, but chilling of the body from insufficient clothing cannot be avoided with the flimsy modern dress so popular with young women now. Some will make any sacrifice on the altar of a slender figure. Under nourishment and susceptibility to disease result. A tight brassiere that restricts respiration, high heeled shoes that make walking an exercise to be avoided and vigorous walking impossible, the "college slouch", excessive cigarette smoking, and insufficient sleep because of too much night life, assist in undermining resistance to disease.

It is probable that many years will pass before human tuberculosis disappears, perhaps it will not disappear until humanity itself passes off the scene, for it is upon hygiene and hygienic procedures that we have to depend after all.

The dangers to which Knopf calls attention are real. Statistics suggest their relative importance and it should be brought to the attention of all who have to do with the health and hygiene of young women that evidence is at hand to confirm the fears of some "old fogies" and give practical point to the injunction of "moderation in all things."

BIBLIOGRAPHY

- 1 Knopf S. A. Tuberculosis Among Young Women. J. A. M. A. 90 No. 7 p. 532 1928 Feb. 18
- 2 Knopf S. A. Essentials in the Prevention of Tuberculosis in Infancy and Childhood. J. A. M. A. 88 1058 1927 April 2

FEDERAL HEALTH CORRELATION

AFTER several years of effort, attempts sponsored by physicians, sanitarians, and political scientists to bring about correlation of the scattered health work of our national government have at last met with partial success. On March 7, 1928, the House of Representatives passed without a record vote the well known Parker bill, H. R. 11026, for the coordination of federal health activities. In order to become a law, this excellent measure must be adopted in the Senate, where Senator Wesley L. Jones of Washington has introduced a similar bill, S. 3356, and it must be signed, or at least not vetoed, by the President.

The Jones-Parker bill deals almost entirely with the administrative organization of the United States Public Health Service. It does not call for large appropriations, and only a small annual increase of funds would be required to care for certain internal readjustments. The bill interferes in no way with State health work, there are no subsidies, and no extension of government activities. The measure would, however, make more effective the present

operations of our chief federal health agency, producing greater results for each dollar spent, and it is therefore of considerable significance to national vitality and ought to be enacted into law

The chief provisions of the Jones-Parker bill are those for the detail of officers or employees of the Public Health Service to other bureaus on request of the head of an executive department; detail of personnel to research and educational institutions; better facilities for the Hygienic Laboratory, a commissioned status for the sanitary engineers and other non-medical scientific personnel of the service, better adjustment of grades of medical and other commissioned officers; establishment of a nurse corps, and creation of a national advisory health council

Indorsement for the principles of the Jones-Parker bill has come from the American Medical Association, New York Academy of Medicine, American Public Health Association, Conference of State Health Officers, U S Chamber of Commerce, and other bodies. It is the first measure providing for federal health correlation which has received unanimous support from the medical and public health professions. Physicians who are interested in progress in this important field would do well to communicate with their Senators and urge the adoption of the Jones bill, S 3356 in the Senate

HELP FIGHT CANCER IN MASSACHUSETTS, APRIL 23-27 1928

PLANS are under way for a state-wide educational campaign looking toward a reduction in the deaths from cancer through early discovery of the disease. The campaign will be held during the week of April 23-27th under the joint auspices of the cancer committee of the Massachusetts Medical Society, of which Dr Robert B. Greenough is Chairman, the Massachusetts Branch of the American Society for the Control of Cancer represented by Dr Franklin G. Balch, and the State Department of Public Health represented by the Commissioner

It is the aim of the joint committee to bring simultaneously before all citizens of the Commonwealth a few essential facts regarding signs of early cancer and pre-cancerous conditions in order that those who might otherwise become victims of the disease may act in time for the successful application of treatment. While an unfortunately large number of cases of cancer are in view of our present knowledge hopeless, it is well known that many others give promise of permanent cure if they can be brought to attention and effectively treated before they are too far advanced. The average delay at the present time between the discovery of the disease and the first visit of the patient to a physician is eight months. There is a still further delay of two months before effective treatment is applied

These ten months of delay must be appreciably shortened before progress can be made in the control of cancer

The chief lines of activity which will be followed during the proposed campaign in each of the clinic cities are these

- 1 An open meeting in which the medical profession and the public will unite
- 2 A medical meeting with clinical session, if possible, arranged by the medical society and the local cancer committee
- 3 Talks by physicians before organizations whose regular meetings fall between April 23-April 27th
- 4 An approach to industrial groups by means of pay envelope inserts or articles in house organs and to householders by bill enclosures
- 5 Newspaper publicity both before and after the occurrence of the various events

This program in the cities participating has been arranged to date as follows

Boston

On Monday, April 23rd in Boston, the campaign will be opened by a mass meeting in Symphony Hall at which the Governor will speak. Cardinal O'Connell is expected also to be present. Other speakers will be Surgeon-General Hugh S. Cumming of the U S P H S, Dr W A Evans, of Chicago, well-known writer on health subjects, and Dr Richard Cabot

The Boston City Club will devote a session to the subject of cancer

The Chamber of Commerce has agreed to do the same probably on Wednesday, April 25th

Speakers will also be placed before many other organizations during the week

Pondville

On Tuesday, April 24th, a clinical session for physicians will be held at the Pondville Hospital, with Dr Joseph Colt Bloodgood as visiting consultant

On Thursday, April 26th at one o'clock the regular clinic will be held

On Friday, April 27th the Hospital Visiting Committee is arranging an open house at the Hospital for friends in neighboring towns

Springfield

On Monday, April 23rd, a public meeting will be held at which Dr Ernest Amorv Codman of Boston will be the principal speaker. On Friday, April 27th, a luncheon meeting will be held. Dr Howard Canning Taylor will speak

Worcester

On Tuesday, April 24th in the evening, a mass meeting will be held at the Armory, with Dr Bloodgood as the principal speaker

A clinic is being arranged by the Worcester and the Worcester North district medical societies on the same afternoon, with Dr Bloodgood as visiting consultant

Lawrence

The education committee is organized and met on March 22, 1928, to make arrangements for the campaign. They are planning to have an opening meeting on Monday, April 23, followed by the opening of the clinic at the Lawrence General Hospital

Lowell

On Monday, April 23rd, an opening meeting will be held in Liberty Hall

On Wednesday, April 25th, a morning clinic for physicians will be held at the Lowell General Hospital with Dr Francis Carter Wood as consultant

Lynn

Lynn will unite with Boston in the opening meeting at Symphony Hall on April 23rd

On Wednesday, April 25th, a luncheon meeting will be held with Dr Francis Carter Wood as principal speaker

Worcester North District

(Fitchburg, Leominster and Gardner)

On Tuesday, April 24th, the medical profession of the Worcester North District will unite with the Worcester District Medical Society at 4 30 in a clinical session at Worcester

Other meetings will be arranged in this district

On Wednesday, April 25th a luncheon meeting will be held in Fitchburg, at which Dr George H Bigelow and other prominent men will speak

Further information will be given from time to time. Suggestions will be welcomed by the committee regarding opportunities for the placing of speakers during the week of April 23rd, or for any other form of publicity

All seats for the Symphony Hall meeting will be reserved, but free of charge. Application for these will now be filed in the order of their receipt, at the office of the Department of Public Health, Room 546, State House

RED CROSS ANNUAL REPORT

THE American National Red Cross, during the fiscal year ending June 30, 1927, administered relief in 77 disasters in the United States, besides which it rendered financial or other assistance in twenty disasters in our insular possessions and in foreign countries. This total does not include fourteen disasters of a comparatively minor character

Before the Florida hurricane, floods in Kansas and Illinois required aid, and this was barely finished when at the end of March, refugees be-

gan coming out of the lowlands flooded by the Mississippi River. The Mississippi Valley Relief work was far from finished when the year covered by this report came to an end. For one month only, out of the twelve, was flood disaster absent during this year.

Within the year \$8,216,893 31 was expended for disaster relief services alone—one half the total expenditures of the Society for all its services—local, national and international. In two disasters about 650,000 people were cared for, and as a result of the appeal to meet the suffering caused by the hurricane in southern Florida and the flood in the Mississippi River Valley, the people of this and other countries supplied the Red Cross with over twenty million dollars.

The enrollment of the American Junior Red Cross—The Red Cross in the schools—reached 5,822,757 in the year 1926-27, the adult membership remaining at a little over 3,000,000.

Every American should be proud of the services rendered by this organization and should consider it a privilege to rally to its support.

THE TRIP TO MINNEAPOLIS FOR THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION

In less than three months The American Medical Association meets in Minneapolis. It is hoped that many members from New England will attend the session. The opportunities to visit clinics in Minnesota as well as in the cities traversed on the trip are exceptional. The railroads offer rates of one fare and a half for the round trip, amounting to \$76 35 from Boston. The lower berth Pullman charge is \$12 75 each way.

Trains leaving Boston by way of the Boston and Albany Railroad at 3 15 in the afternoon or at 3 by way of the Fitchburg Railroad arrive in Chicago early the next afternoon. Trains leaving Chicago at about 6 30 P. M. reach Minneapolis at about 8 30 the next morning.

On the return trip one may leave Minneapolis about 8 P. M. and reach Chicago in ample time to catch the 10 A. M. train for Boston, arriving the next noon.

The railroads are willing to provide through sleeping cars from Boston to Minneapolis and return provided there is a demand for this service.

A group of twenty to twenty-five are necessary to secure a special car for the trip.

If those planning to attend the meeting wish to form a party or parties and go by special car will send their names to the Executive Secretary of the Massachusetts Medical Society at 126 Massachusetts Avenue, Boston, every attempt will be made to meet their wishes. This invitation applies not only to the Fellows of the Massachusetts Medical Society but to the Members of the Societies of all the New England States.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

BALFOUR DONALD C. M.B., M.D. University of Toronto Faculty of Medicine, 1914 F.A.C.S. Head of Section in the Division of Surgery, Mayo Clinic, Chief of the Division of Surgery, The Mayo Foundation, and Professor of Surgery, The Mayo Foundation, Graduate School University of Minnesota, Rochester, Minnesota. His subject is "The Evaluation of Present Methods of Treatment of Lesions of the Stomach and Duodenum" Page 273 Address Mayo Clinic, Rochester, Minn.

MASON, ROBERT L. A.B., M.D. Harvard Medical School, 1922 Department of Surgery, Lahey Clinic Address 605 Commonwealth Avenue, Boston Associated with him is

HURXTHAL, LEWIS M. M.D. Harvard Medical School, 1923 Resident in Medicine, Massachusetts General Hospital, 1925-1926, In charge of Medicine at the Lahey Clinic Address 615 Commonwealth Avenue, Boston Their subject is "Femoral Embolectomy" Page 277

KORB, CHARLES M.D. Tufts Medical School 1923 Fellow in Department of Pathology and Bacteriology, Rockefeller Institute for Medical Research July 1923-July 1924, Assistant in Department of Pathology and Bacteriology, Rockefeller Institute for Medical Research, July 1924-July 1925, House Physician, 1st Medical Service, Boston City Hospital, March 1926-November 1927 Address 11 Morse Street, Boston Associated with him is

ATMAN, DAVID A.B., M.D. Harvard Medical School, 1926 Assistant Resident Physician, Boston Sanatorium, 1926, House Physician, First Medical Service, Boston City Hospital Address Boston City Hospital, Boston Their subject is "Aortic Aneurysm Rupturing Into the Pulmonary Artery" Page 280

MEIGS, JOE VINCENT A.B., M.D. Harvard Medical School, 1919 F.A.C.S. Surgeon to Out-Patients, Massachusetts General Hospital, Assistant to Out-Patients, Collis P. Huntington Hospital, Surgeon, Pondville Hospital at Norfolk, Surgeon, Vincent Memorial Hospital Surgeon to Out-Patients, Palmer Memorial Hospital His subject is "Dermoid Cysts Above and Below the Diaphragm of the Mouth" Page 282 Address 286 Marlborough Street, Boston.

LAWLISS, F. J. M.D. University of Vermont, College of Medicine, 1923 Surgeon, Canadian Pacific Railroad His subject is "Goitre in General Practice" Page 286 Address Richford, Vermont

HAMILTON, BURTON E. A.B., M.D. Harvard Medical School, 1910 Cardiologist, Boston Living-In Hospital, Consultant, Cardiovascular Diseases at the Palmer Memorial, New England

Deaconess and Robert E. Brigham Hospitals, Junior Visiting Physician, Boston City Hospital His subject is "Classification, Prognosis and Control of Patients with Heart Disorders in Pregnancy" Page 292 Address 475 Commonwealth Avenue, Boston

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY
Foster S. Kellogg, M.D. Frederick L. Good, M.D.
Chairman Secretary
Frederick J. Lynch, M.D., Clerk

The Importance of a Complete History in an Obstetrical Case

Teachers of clinical medicine have urged over and over again the need of careful history taking while examining a patient. It would seem as if it were unnecessary to call the attention of the profession again to the great role that an accurate and precise history plays in the matter of making a good diagnosis. But every day experience teaches us that history taking is not a well developed art among the members of the medical profession. In the English Medical Schools and in some of the best Medical Schools in the United States, professors of clinical medicine are making earnest efforts in training the Medical student in the art of history taking. Medical history taking is an art that can only be acquired by diligent and persistent effort. The expert in history taking combines in his work the art of the diplomat, the subtle power of the lawyer who excels in cross examination and the patience of a saint. It is more than worth while to cultivate, as a physician should the gentle, patient and persistent in his cross examination. Already an objection is registered—it takes too much time. One of the most illustrious practitioners of internal medicine in the United States, a man who has been a prodigious worker, and has given to the profession a system of medicine said on one occasion, "I never examine more than four patients a day in my office," and his office hours were as long as the general run of his colleagues. From the earliest years of his practice, his well taken histories were among his best medical assets. We hazard the belief that in the past the general run of practitioners of obstetrics have not fully realized the importance of a well taken history. For some years prenatal care has been urged and all practitioners of obstetrics and the general practitioners doing obstetrics have given more or less prenatal care to the pregnant woman. We believe there are very few pregnant women who come under the care of a physician who do not have some pre natal care. The prenatal care has been given to a greater extent among the primiparae than among the multiparae. It would seem to be taken for granted that if a woman went through her first and second pregnancies without difficulty, all future pregnancies would come to a successful

ending and an uneventful convalescence. Experience shows that histories of multiparae have not been exhaustive. A miscarriage after the first-birth has been forgotten by the patient and the fact was not discovered by her physician when the patient came to engage him for her second pregnancy.

A miscarriage with a rise of temperature between the second and third pregnancies with pelvic involvement was not thought of sufficient importance by the patient to be remembered when she presented herself for examination for her third pregnancy, and her then attending physician did not elicit this information. Therefore an old inflammation of the tubes was not discovered until acute symptoms appeared post partum.

We take it for granted that scarlet fever and the other exanthemata of childhood are taken into consideration when histories are taken of the pregnant woman as well as the histories of all focal infections, tonsillitis and recent attacks of influenza. Recent studies have brought to the attention of some obstetricians that there do exist many cases of chronic pelvic inflammation associated with pregnancy which are quiescent during pregnancy and parturition which are likely to recur in the post partum period and which often terminate with disastrous results.

Of what avail, one might say, if the physician did know his patient carried the potentialities of puerperal sepsis? There is the advantage of knowing true conditions. There is also the advantage of knowing her sepsis came from within and not from without. It allows the practitioner to concentrate all his efforts in combating the disease at its source. It saves time and patience of the practitioner and it will fit him better temperamentally at least, to do his best for the patient.

We think that the past history of the pregnant woman should be thoroughly investigated. Every parturient woman should be thoroughly examined as to her past history. The amount of knowledge that will be had for the asking will astonish many practitioners. Such an examination will require tact, it will call for diplomacy, it takes on the part of the examiner, extreme patience.

The finesse of carrying out such an examination depends on the personality of the examiner. The average man can do it successfully if he is careful and cares to give the time. Giving his patient the best possible care obtainable will be the practitioner's satisfaction.

Questions of a similar nature to the above will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

BOSTON MEDICAL LIBRARY

PERIODIC HEALTH EXAMINATION

THE prolongation of human life has always intrigued mankind. The search by the Alchemists for the Philosopher's Stone had for its objective the same two desiderata that chiefly actuate men in this generation viz, transmutation of baser elements into gold and the springs of eternal life. The chief difference between our method of attack upon the problem and theirs, lies in the way we go about it. They hoped to achieve it by magic and we by the establishment of conditions favorable for its accomplishment. Both quests are in opposition to pretty well established laws of the moral and physical worlds. In the one case, that the love of wealth is the root of all evil and in the other to the fact that the increase of population (and with this is concerned prolongation of life) is conditioned upon physical and economic laws which may not be transgressed. If the biblical limit of three score years and ten for the average duration of a serviceable participation in mundane affairs as well as for a comfortable personal experience with life is approximately correct and Malthus and East are right in their theories as to the laws which govern the population the Earth may support, then our efforts to extend human life should be directed not to an actual increase in the "length of days", but to a diminution of the number of sick days in order that individual efficiency during the allotted period may be maintained at its maximum.

Periodic Health Examination is a live topic. Much has been written about it. It has great possibilities along certain lines, but it has in it something more worth while than the urge impelling Ponce de Leon to search for the Fountain of Youth.

During the week of March 26th some idea of the volume of literature on this subject may be had by consulting the exhibition in Holmes Hall.

Nicholas Culpepper 1616-1654
William Salmon 1644-1713

Quackery has always had a following. In England during the 17th century there lived two outstanding exponents of it and the Library has on its shelves several publications which created considerable stir at the time of their issuance from the press and aroused the ire of the organized medical societies in London where these two famous irregular practitioners resided and practiced. One of their works that of Nicholas Culpepper, was the first medical book to be published in America which may account for the prevalence of charlatanism in this country, though it is more likely that practice of that sort thrives because it is what a certain portion of the public wants. Nicholas Culpepper (1616-1654) was the son of an English clergyman who seems to have been incensed that the medical profession of his day did not see fit to

play upon the credulity of the public by resort to the methods of a by-gone period. He was versed in astrological lore had a good knowledge of Greek and Latin which he acquired at Oxford where he spent some time and he had made himself familiar with the older medical writers and finally had been apprenticed to a pharmacist. This smattering of knowledge in many lines coupled with a conscience which made it easy for him to fool the public and a shrewdness which pointed the ways in which this could readily be accomplished brought him a large practice. Then as now one of the royal roads to success was to keep one's self in the public eye through the medium of the press and he became a prolific writer. He gained much notoriety by translating in 1649 the *Pharmacopoeia* of the College of Physicians with comments of his own. The publicity which he derived from the verbal castigation which the much incensed authorities of the College heaped upon him as usual served to advertise him the more. In 1653 he published a second book entitled the 'English Physician Enlarged with 369 medicines made of English herbs etc. These two works had a very large sale. Five editions of this last book were published at that period and it was reissued as late as 1809. He translated Galen's *Art of Physic* and compiled from Arabic and Greek writings another book published in 1651 called 'Astronomical Judgement of Diseases' both of which the Library possesses. He gave gratuitous advice to the poor whenever called upon but in spite of his publications and his large practice, does not appear to have been financially very successful. He died at 38 of phthisis leaving a number of unpublished manuscripts to his wife.

William Salmon (1644-1713)

Salmon appears to have been one of many irregulars who before there was any out-patient service in the London Hospitals took their stand outside the entrance gate to St Bartholomew's where they treated those who could not be admitted for one reason or another sold them prescriptions as well as drugs cast their horoscopes and otherwise plied the arts of the quack physician. It was claimed that he was trained by a fakir from whom he acquired his stock in trade. He had travelled quite widely, having been to New England. He wrote extensively, as did Culpepper often dedicating his books to distinguished men of the time whose acquaintance he did not enjoy. The more noted of these works were "Ars Anatomica", "Synopsis Medicinæ or a Compendium of Astrological Galenical and Chemical Physick" and in 1710 a two volume folio entitled "Botanologia or the English Herbal", dedicated to Queen Anne. He accumulated quite a large library possessed two microscopes and numerous curios which he picked up on his travels. He wrote on other subjects than medicine but did not fail

to use these publications as a medium for the advertisement of his pills. The careers of these two charlatans would seem to indicate that in that day the public were "fair game" and that the arts of the unscrupulous practitioner of medicine were being practised as skillfully and shamelessly as they are today.

MISCELLANY

BOSTON HEALTH LEAGUE NEEDS \$8 000

The Boston Health League comprising thirty-one agencies engaged in public health programs needs \$8 000 to meet its budget. This organization is now in its eighth year and brings in contact public and private health bodies. The committee which endorses this appeal has nine members as follows: Howard Coonley, Paul E. Fitzpatrick, John S. Lawrence, Charles A. Pastene, James J. Pheasant, A. C. Ratscheky, Felix Vorenberg, C. F. Weed and John Macomber.

THE ATTITUDE OF LOCAL HOSPITALS TOWARD COLORED PEOPLE

The recent controversy regarding the proposed new Plymouth Hospital brought out unqualified evidence of the fairness of local hospitals in accepting colored doctors and internes according to Edward W. Wilson, Chairman of the Committee unfavorable to the Plymouth Hospital.

The members of this Committee made extensive inquiries regarding the hospital conditions in Boston as they affect the colored people. After a careful study of the facts they found that the managements of the present established hospitals take a very favorable attitude toward the colored people. On February 25th 1928 Dr. John J. Dowling, the Superintendent of the Boston City Hospital over his own official signature said:

Every department of the Boston City Hospital including all its facilities is open to all persons irrespective of race, creed or color. I am glad to say that no policy of exclusion exists in this institution.

Other hospitals gave similar assurance that they do not draw the color line but the policy of the Boston City Hospital is especially significant because it is the one and only fully equipped public hospital in Boston. This is most important to the public because any racial discrimination there would be a public wrong which if it existed should be corrected.

The Committee against the Plymouth Hospital is very happy to report that a most open policy in regard to race, creed and color exists in many hospitals approached by the Chairman.

Benton R. Wilson (father of Edward W. Wilson,) President of the Boston Association for the Advancement of Colored People endorsed this statement.

SMALLPOX PATIENTS NOT VACCINATED

Of the seven cases of smallpox reported in Connecticut recently four were delayed reports of cases that occurred in January. These cases were all quarantined at the time they occurred but a recent check up shows that they were not included in the weekly list of cases reported.

The three new cases, like the other cases in the outbreak, were among persons who had never been vaccinated. One is a man who was too busy to be vaccinated. He thought a sore arm might interfere with his work for a day or two. Neighbors living on both sides of him had smallpox but he was not vaccinated. As a result he was shut up for a few weeks with smallpox.

Another is an infant who came down with smallpox when about eighteen days of age. Some of the neighbors of this family had smallpox but the parents thought the infant too young to be vaccinated. The third new case was sixty-seven years of age and had never been successfully vaccinated.

Smallpox attacks both young and old. It attacks the busy and the idle. The moral is—be vaccinated, especially when neighbors have smallpox. No one is too young or too old to have smallpox unless protected by vaccination. No one is too busy to escape smallpox when infection comes his way. Persons may be vaccinated at any age from *one day to a hundred years*. The busy man cannot afford to neglect this important preventive measure. **BE VACCINATED**

Also be sure that the vaccination is successful. There are a number of reasons why vaccination may not always "take" on a person who is susceptible to smallpox. One case was reported recently as having been vaccinated three times and the vaccinations did not "take" yet this patient later had smallpox. For protection against smallpox **BE VACCINATED** and make sure that the vaccination "TAKES."

PROGRESS IN THE ERADICATION OF BOVINE TUBERCULOSIS

The New Jersey Department of Health has issued a circular setting forth the facts with respect to Bovine Tuberculosis quoting Dr. W. H. Donnelly of the New York Postgraduate Medical School who argues for clean milk from tuberculin tested cattle as one important feature of the campaign against this disease.

Also quoting Dr. J. H. McNeill, Chief of the Bureau of Animal Industry for New Jersey who asserts that the cattle of that State are rapidly being freed from this disease.

The United States Bureau of Animal Industry reports that since 1917 about one million cattle affected with tuberculosis have been killed.

The consumption of milk has increased since 1915 by forty-nine quarts per capita because of the greater safety secured by the better grade of cattle brought about by the elimination of infected cows according to this bulletin.

MATERNAL MORTALITY IN RHODE ISLAND

In a letter to the *Rhode Island Medical Journal* Dr. B. U. Richards, Commissioner of Public Health of Rhode Island, announces the forthcoming survey to be made in that State of the causes of maternal mortality to be conducted by a representative of the Children's Bureau in Washington.

This survey has been endorsed by the Rhode Island State Medical Society.

In his letter Dr. Richards refers to Maternal Mortality as one of the dark spots in public health work in the United States, citing the record as standing next to the lowest in the list of twenty countries. He further claims that Rhode Island makes a bet

ter showing in the statistics of maternal mortality than any of the other States with one exception.

HEART DISEASE AND LIFE INSURANCE

The Metropolitan Life Insurance Company paid fourteen million dollars in 1927 for death claims due to heart disease.

This disease is the cause of the largest disbursement by this company, the next being because of deaths due to violence with tuberculosis third and cancer fourth.

This means probably, that deaths due to cancer are not in so large a proportion among persons in the insurable age.

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS

FEBRUARY, 1928

GENERAL PREVALENCE

The total reported incidence of communicable diseases for February was the highest for that month since 1920.

Not only were more cases of measles reported than in any previous February, but the figure sets a new high mark for any month in any year. 113 per cent more cases were reported than the previous high February record in 1926. The reported incidence of poliomyelitis also sets a new high record for February. The incidence of chicken pox and mumps was rather high.

The reported incidence of diphtheria, scarlet fever, influenza, pulmonary tuberculosis, lobar pneumonia, German measles and whooping cough was within endemic limits.

Fifteen cases of typhoid fever were reported for February, 1928. This is slightly lower than the previous low record of seventeen cases reported for June 1927.

RARE DISEASES

Actinomycosis was reported from Natick, 1, total, 1. *Anterior poliomyelitis* was reported from Boston 6, Brockton 1, Cambridge, 1, Fall River 1, Melrose 1, Newton, 1, Taunton 1, Woburn, 1, total, 13.

Dog bite requiring anti-rabic treatment was reported from Belmont 1, Boston 9, Brockton, 1, Brookline, 3, Cambridge 5, Chelmsford 6, Danvers 2, Fall River 3, Greenfield 1, Hopedale 3, Lowell 6, Melrose 2, Merrimac, 1, Milton 1, Quincy 1, Revere, 7, Winthrop 4, total 56.

Encephalitis lethargica was reported from Concord 1, Medford 2, Somerville 1, Taunton 1, Worcester 4, total 9.

Epidemic cerebrospinal meningitis was reported from Arlington 1, Northampton 1, Quincy 1, Southwick 1, Weymouth 1, Worcester, 2, total, 7.

Septic sore throat was reported from Belmont, 1, Boston 9, Lowell 1, Malden 1, Melrose 4, Plymouth 1, Quincy 2, Winthrop 2, Worcester 1, total 22.

Tetanus was reported from Braintree 1, Hudson 1, total 2.

Trachoma was reported from Boston 3, Cambridge, 2, Lawrence 2, Quincy 1, total 8.

MONTHLY REPORT OF CERTAIN COMMUNICABLE DISEASES

DISEASE	Cases in Entire Population				Case Rates per 100,000 Pop.		
	Feb. 1928	Feb. 1927	Prosodemic Index	Epidemic Index	Feb. 1928	Feb. 1927	Expected Rate ***
ALL CAUSES	14,596	8,301	-	-	337.5	194.4	-
Ant. Poliomyelitis	13	2	8*	1.6**	.3	.05	.2
Diphtheria	496	424	436*	1.1**	11.5	9.9	10.1
Measles	7,174	855	3,199*	2.2**	165.9	20.0	74.0
Pneumonia, Lobar	504	484	733*	.8**	14.0	11.3	16.9
Scarlet Fever	1,400	2,129	1,219*	1.1**	32.4	49.9	23.2
Tuberculosis, Pul.	415	460	299*	1.4**	9.6	10.8	6.9
Typhoid Fever	15	25	16*	.9**	.3	.6	.4
Whooping Cough	1,079	543	950*	1.1**	24.9	12.7	22.0
Chicken Pox	1,092	1,244	-	-	25.2	29.1	-
German Measles	110	39	-	-	2.5	.9	-
Influenza	57	70	-	-	1.3	1.6	-
Rumps	1,325	1,306	-	-	30.6	30.6	-
Tuberculosis	70	65	-	-	1.6	1.5	-

* This Index is an attempt to estimate the number of cases based on the trend during the past years which can be expected to occur, and is for the purpose of comparison with the number of cases which actually did occur.

** This ratio expresses how prevalent the disease is compared with the index mentioned above, 1.0 indicates that the actual number of cases equals the expected number. A larger number means a greater prevalence, and a smaller number a lesser prevalence than expected. Thus 2.0 would indicate twice the expected number of cases, and .5 half the expected number of cases. The method used to determine the indices is described in the August 18, 1927 issue of the Boston Medical and Surgical Journal.

*** Calculated from the Prosodemic Index.

PRINCIPAL CAUSES OF ILLNESS IN TYPICAL AMERICAN CITY

Public health in a given community depends upon the personal health of each individual. Health officials generally have recognized according to Surgeon General Cumming of the United States Public Health Service that although a great deal is accomplished by means that deal with community conditions yet the individual is the foundation upon which the public health is built. In order to know what diseases must be guarded against it must first be known what diseases are present.

Not only the causes of death but the causes of ill health as well are of great importance to health officers and physicians in their scientific searching for causes and conditions in their preventive work. Of far greater importance than death rates and life table expression is a view of the health situation depicted by physical impairments as revealed by competent medical examinations and by morbid conditions as ascertained by adequate records of sickness.

With this thought in mind a study was conducted by the Public Health Service extending over more than two years in a city regarded as a typical American small city in one of the eastern States. The information obtained through this study is of great interest to the general public as it shows clearly what diseases are most prevalent in the general population.

The city in which these studies were conducted may be said to be typical of many other cities of its

size in the eastern section of the United States. The principal object of this study was a record of illnesses that were experienced by a population group composed of persons of all ages and both sexes and in no remarkable respect unusual. The records of illnesses obtained were of illnesses as reported to experienced investigators. The reports were made by the household informant, usually the wife either the sickness as experienced by herself or as she observed it in her family.

The rate of sickness from colds and bronchitis was the highest being annually 418.6 per 1,000 persons. Influenza and grippe came second with a rate of 143.2 per 1,000. Diseases of the digestive system were 96.5 per 1,000. Tonsillitis and sore throat 65.7. Confinement and other peripheral causes 46.9. Diseases of the nervous system including headaches 44.1. Accidents and other external causes 39.5. Measles 34.2. Whooping cough 22.6. Rheumatism and lumbago 21.8. Heart and other circulatory diseases 18.3. The list contains ten or eleven more items and concludes with hay fever and asthma which is shown to have caused 5.8 cases of sickness each year per 1,000 persons.

From this study fairly accurate records of real illnesses were secured. As a matter of fact less than 5% of the illnesses of exactly stated duration were recorded as one day or less in duration. Nearly 80% were three days or longer and 60% were eight days or longer in duration. Approximately 40% were not only disabling but caused confinement to bed. It is evident therefore that in the main the illnesses recorded were more than trivial in their character.

in spite of the fact that in some instances mere symptoms were given as diagnoses

There are certain facts from this study that stand out with particular significance. First, the extraordinarily high incidence of sickness shown in early childhood was a rather surprising result. Illness was far more frequent under 10 years of age than at any other time of life. Second, the interesting suggestion was afforded that the average individual is more free from illness in the age period 15 to 24 years. Thereafter sickness becomes more frequent as age advances, and it may be added, upon the basis of other studies as well as these that sickness becomes more severe and more frequently fatal.

The picture given by the record of sickness according to causes or, more precisely, according to the kind of sickness, is in sharp contrast to that given by causes of death. Respiratory diseases and disorders account for 60 per cent of sickness as against 20 per cent of deaths. The general group of 'epidemic, endemic, and infectious' diseases account for eight per cent of illness whereas only about 2 per cent of the deaths were due to this group. Digestive diseases and disorders caused 10 per cent of the illness as against 6 per cent of the total deaths. On the other hand, the group of general diseases (which includes cancer, the diseases of the nervous and circulatory systems and the diseases of the kidney and related organs) were relatively much more important causes of death than of sickness. The diseases of the heart and blood vessels show the sharpest contrast,—24 per cent of deaths are due to these conditions, as against only 2 per cent of the sicknesses. In other words these diseases manifest themselves relatively rarely in definite attacks of sickness, although they undoubtedly shorten life and make life much less enjoyable while they last.

The prevalence of 'chronic' conditions as ascertained by this study is of interest. Of each 1000 individuals on the average 34 were affected with arthritis, lumbago and myalgia, 22 with neuralgia, neuritis and sciatica, 21 with diseases of the heart, 10 with chronic indigestion and other intestinal disorders, 10 with appendicitis and 7 with nephritis.

The further query suggests itself—at what age is the individual least able to withstand diseases after he has been attacked? One way to measure this is to compare the attack, the greatest resistance to death in childhood being the age period 5 to 14. The lowest resistance is in infancy and early childhood, 0 to 4 years, and in middle and old age. Ability to survive illness thus varies markedly from resistance to illnesses at different ages, particularly in childhood (5 to 14) when the average individual suffers from illnesses frequently, but has a relatively small chance of dying, and in the older years when not only does his susceptibility to illness increase but also his chance of death. This is due partly of course to the nature of the illness occurring at these ages and partly to the diminished ability to resist the diseases which manifest themselves in sickness.

It is believed that one of the most important lessons to be drawn from this study is that public health has as yet barely touched the task of preventing the conditions which manifest themselves in physical and mental impairments in inefficiency and illness and in postponable death. Plague and pestilences have been diminished, infant and child mortality from infectious and intestinal disorders and health

ful living is being established more and more firmly as a popular ideal but aside from these the prevention of disease remains as an outstanding problem yet to be solved.

The hope of the future lies in the continued and increasing growth of scientific knowledge which can be applied to the protection against disease, and the promotion of the public health.—*Bulletin United States Public Health Service*

RECENT DEATH

REGAN—DR WILLIAM H. REGAN of 22 Wendell Street, Cambridge, died Wednesday night, March 21, after a brief illness. He was born in Natick, Massachusetts, and was a graduate of the Natick High School and of Tufts Medical School, Class of 1906. He served as house officer on the eye and ear service at Boston City Hospital. He was a member of the staff of St. Elizabeth's Hospital and consulting physician of the Cambridge Tuberculosis Hospital. He also served on the State Board of Registration in Optometry.

OBITUARY

RESOLUTIONS ON DEATH, OF DR ADAM S. MACKNIGHT

At a meeting of the Executive Committee of the Massachusetts Tuberculosis League, Resolutions were adopted as follows:

'The Executive Committee records with sorrow the passing of one of its members, Dr Adam S. MacKnight, Superintendent of Bristol County Tuberculosis Hospital, and late Chairman of the Tuberculosis Section of the Massachusetts Medical Society.

"Dr MacKnight's service since his appointment to this Committee has been faithful, and his advice and counsel of great value to the Committee and the Staff of the League.

It is with deep sorrow we record his death on our minutes and this memorial will express the deep sympathy of the Committee to the members of his family. The President and Secretary are hereby requested to transmit a suitable message of sympathy to the family of Dr MacKnight."

CORRESPONDENCE

THE HANGMAN ADMINISTERS ORTHOPEDIC TREATMENT TO CATHERINE THE GREAT

Mr. Editor

The following is from the 'Memoirs of Catherine the Great,' translated by Katharine Anthony and based on the German Edition (Alfred A. Knopf, New York, 1927).

On Catherine's death this particular memoir, addressed to Countess Bruce, was found with others tied up in a single package and addressed to her son Paul. 'They were read by a few, laboriously copied and quietly shown to trusted individuals. During the reign of Paul and Alexander this surreptitious circulation went on without impediment. But

when Nicholas I the grandson, whom the Empress had neglected, and who had been taught to hate her, came to the Russian throne the memoirs disappeared. The secret police traced the existing copies and destroyed them. The implacable Nicholas then sealed and locked the originals in the state archives and no one dared to open them until the end of his long reign. A solitary copy had escaped the Czar's police and been smuggled out of Russia. It was published simultaneously in England, France and Germany.

The Memoirs are full of descriptions of Catherine's numerous illnesses and Boerhaave's ministrations to her in many of them. The following seems one of the most interesting.

At the age of seven I took a severe cough. It was the custom to have us kneel each night and morning to say our morning and evening prayer. One evening as I knelt and prayed I was obliged to cough so violently that the effort made me fall on the left side and the stabs of pain almost took my breath away. Someone rushed to me and I was carried to my bed, which I kept for three weeks. I lay always on my left side and coughed and had stitches and a very high fever. A proper physician was not in the neighborhood; they gave me remedies but God knows of what they were composed. At last after a long period of suffering I was able to get up and when I was dressed it was seen that I had almost taken on the form of a Z. My right shoulder was higher than my left, my back bone formed a zigzag and my left side was hollow. My women and those of my mother whom the former asked for advice decided that my parents' attentions should be called to it. The first step taken in the matter was to impose the strictest silence on everybody concerning my condition. My parents were very unhappy that one of their children should be lame and the other hunchbacked. At last, when several experts had been questioned in the greatest secrecy it was decided to seek out a skillful person who knew how to heal dislocations. The search was in vain, for they had a horror of calling in the only person who had skill at it because he was the hangman of the place. This uncertainty lasted for some time but at last it was decided to fetch him secretly in any case.

The man examined me and then gave orders that every morning as I lay in bed a maiden still fasting should rub my shoulder then my spine with her spittle. Then he made a kind of jacket which I never laid aside by day or night except to change my linen.

Every other day he came in the early morning to examine me again. Besides this he had me wear a black ribbon which passed around my neck went from the right shoulder around the right arm and was fastened in the back. In short I do not know whether it was that I had no tendency to grow crooked or whether these means accomplished it but at any rate after a year and a half of this treatment there was hope that my health would be restored. I did not lay aside the uncomfortable jacket until I was ten or eleven years of age.

Catherine's description of her acute pneumonia a probable following purulent pleurisy and the resulting scoliosis as quoted from this memoir leaves a graphic and vivid impression on the mind of the reader.

Sincerely yours

March 16th 1928 WILLIAM PEARCE COUES M.D.

AN INTERESTING INTERPRETATION OF THE LAW ON PREVENTION OF CONCEPTION IN MASSACHUSETTS

March 17, 1928.

Editor, Boston Medical and Surgical Journal

On February 8 1928 the Boston police arrested me on the charge of exhibiting articles for the prevention of conception. The arrest was based on the following law:

'Whoever sells lends gives away, exhibits or offers to sell lend or give away an instrument or other article intended to be used for self abuse, or any drug medicine, instrument or article whatever for the prevention of conception or for causing unlawful abortion or advertises the same, or writes prints or causes to be written or printed a card, circular book, pamphlet advertisement or notice of any kind stating when where how, of whom or by what means such article can be purchased or obtained, or manufactures or makes any such article, shall be punished by imprisonment in the State prison for not more than five years or in jail or the house of correction for not more than two and one-half years or by a fine of not less than one hundred nor more than one thousand dollars.

For many years I have lectured on the problem of sex and sex hygiene for women's clubs and for groups of my women patients. In these lectures general hygiene and the physiology of sex were covered in some detail. Incidentally the subject of birth regulation was introduced as pertinent to any modern discussion of sex hygiene. The use of the so-called spring wire gold pessary was denounced and the dangers of irritation and possible cancer were emphasized. For greater stress one pessary, which I had extracted from a patient, was shown, and referred to as an instrument of torture. Then a rubber pessary was shown and attention was called to the possibilities of irritation in case this was not selected and fitted by a physician. The 'exhibit (demonstration)' of these two pessaries led to my arrest. A private hearing in the Municipal Court resulted. My attorneys pointed out that these pessaries were not being shown for advertising purposes but to emphasize a warning against their misuse. The Court accepted this interpretation.

This interpretation of the spirit rather than the letter of the law is encouraging to physicians for it indicates that they may go further than laymen and yet the fact that I was arrested shows the need to change the statute so as to exempt physicians from the hidebound laws imposed upon the public.

An amendment to the existing law setting forth definitely the conditions under which a physician may give birth control information for medical reasons should be sponsored by the medical organization of Massachusetts.

ANTOINETTE F KONIKOW M.D.

557 Beacon Street Boston Mass.

COMMENTS ON AN EDITORIAL

524 Commonwealth Avenue

Boston Mass.

March 15 1928

Editor of THE NEW ENGLAND JOURNAL OF MEDICINE

I read with interest your critical editorial on Dr Cabot Professor of Clinical Medicine and Professor of Social Ethics Harvard University in March 8 issue of the JOURNAL. One need not be surprised at

the doctors pessimistic views about the efficacy of cures by medical means, since they appear to be justified by his experience as published weekly in the JOURNAL, in his discussions of the clinical case records, every one of them being an autopsy case

His pessimistic views are but the echo of those of an illustrious Harvard professor, who attained distinction in literature, Dr O W Holmes, whose medical practice died in giving birth to the famous apothegm "If all the medicine in the world was dumped into the sea, it would be good for Humanity and bad for the fishes" Be it noted, however, that the ethical Holmes lived up to his belief, for he early removed his doctors sign, ceased to practice upon the quick and restrained himself to the safer practice on the dead

I do not know the nine diseases that Dr Cabot is quoted as regarding curable by medicine, but if it be not already in the list, I respectfully request that he add epilepsy to it. Research that disclosed the nature of that disease and thus indicated measures found curative, is back of this request, and ready for demonstration to my fellows when they wish

If twenty-seven years' general and ten years neurological practice aid in qualifying for the giving of an opinion, I opine that the newer generation of practitioners with the increasing knowledge of the endocrines and the vitamins have within their grasp the golden age of medicine let them by earnest study of disease especially incipient disease, make it their own

Sincerely yours,

EDWARD A TRACY, M D

NEWS ITEMS

DR CHARLES SIMPSON MEETS WITH MISFORTUNE—On March 2nd Dr Charles Simpson of Southbridge, a Fellow of the Massachusetts Medical Society lost his home and office equipment by fire

He has the cordial sympathy of his friends

Dr Burrage will replace his diploma issued by the Society

APPOINTMENT OF DR FRANCIS D DONOGHUE

—The appointment of Dr Francis D Donoghue, Medical Adviser to the Massachusetts Industrial Accident Board, as representative of the United States at the fifth International Conference for Medical Science as applied to workmen's accidents and occupational diseases, has been announced This conference will be held at Budapest Hungary September 3rd, 1928

This is the second time that this honor has been conferred on Dr Donoghue who is recognized as an authority in matters relating to industrial accident problems as well as a skillful surgeon Dr Donoghue has accepted the appointment.

THE DEATH OF DR ROBERT ABBE—Dr Robert Abbe, one of the leading surgeons of this country died March 7 1928 He was 77 years of age His name was associated with the early use of radium and he was credited with the first application of this agent in the treatment of cancer in this country

He was surgeon at St Luke's Hospital in New York from 1884 up to the age of retirement

He had contributed to a cabinet which contained

mementos of Rush, Jenner, Pasteur, Lister and Curie of which Dr William W Keen is custodian

NOMINATION BY GOVERNOR FULLER—Dr Daniel P O'Brien of New Bedford has been nominated by Governor Fuller as Medical Examiner and Dr Charles Shanks of New Bedford as Associate Medical Examiner Both of these nominations are for reappointments

The Council will undoubtedly confirm the action of the Governor

APPOINTMENT OF DR PAUL HOWARD MEANS

—After thirty three consecutive years of service as Medical Adviser for Harvard University, Dr M H Bailey has resigned and Dr Paul Howard Means has been appointed to fill this position Dr Means has been Assistant to Dr Bailey at the Stillman Infirmary He graduated from the Harvard Medical School in 1922

NOTICES

Dr Mark H Wentworth of Concord has taken an office at 416 Marlborough Street, where he will meet his patients

SIR HUMPHREY ROLLESTON AT THE PETER BENT BRIGHAM HOSPITAL

Sir Humphrey Rolleston, Bart, K C B, M D, Regius Professor of Physic at Cambridge England will be in residence at the Peter Bent Brigham Hospital, Boston, for the week beginning March 25th, as the fourteenth Physician in Chief Pro tempore in charge of the medical service of Dr Henry A. Christian Hersey Professor of the Theory and Practice of Physic at Harvard University and Physician in Chief of the Peter Bent Brigham Hospital, Boston Massachusetts

REPORTS AND NOTICES OF MEETINGS

HARVARD MEDICAL SCHOOL NEWS

On Friday, March 9th, 1928, at the Harvard Medical School Professor George Barger, M A D Sc, F R S, Professor of Chemistry, University of Edinburgh spoke to members of the Medical faculty and students on 'Thyroxine and the Thyroid Gland'

In his very scholarly address Professor Barger carried his audience through a maze of intricate structural chemical formulae He showed that Kendall who claimed to have synthesized thyroxine in 1914 and who believed it to be a derivative of oxyldol was wrong in parts of his reasoning Herrington, who together with Professor Barger worked on this problem obtained by his method an extract which was twenty five times as active as that of Kendall and which contained 14% iodine as compared with 3% in former attempts

In synthesizing thyroxine Herrington and Barger by using well known chemical processes and beginning with Pntraniline and quinol made thyroxine which on clinical tests was shown to have the same value as the extract Kendall's thyroxine was worth \$300 per gram while Herrington's sold for \$40 per gram The synthetic thyroxine sells for \$20 per gram

Professor Barger pointed out that physiological and clinical tests amply demonstrate the efficacy of synthetic thyroxin. If thyroxin is added to water in which tadpoles are living growth is hastened. A certain Mexican amphibian which tends to remain in the larval stage grows up rapidly if thyroxin is injected. So also in myxedematous patients the synthesized thyroxin raises the metabolic rate 23% per mg which corresponds to the increase for thyroid extract as found at the Mayo Clinic.

The measurement of thyroxin is done by the colorimetric method. It is dissolved in chloroform and compared to a standard. In this way minute amounts can be detected.

In concluding his lecture Professor Barger recalled the many theories which have been put forth to explain the cause of goitre. He showed that our present knowledge is a throwback to a theory advocated in 1837.

The meeting was well attended and one of the most interesting lectures delivered at the Medical School this year.

STAFF MEETING OF THE MASSACHUSETTS GENERAL HOSPITAL

A staff meeting of the Massachusetts General Hospital was held on March 8. The paper of the evening was delivered by Dr. Elliott C. Cutler, Professor of Surgery at Western Reserve University Medical School on the experimental production of abscess of the lung.

Dr. Faxon, Resident on the East Surgical Service of the Hospital, reported some observations on ten burn cases as follows:

Ten cases of burns of varying severity were brought to the Emergency Ward of the Massachusetts General Hospital within an hour of the time they received their injuries. One patient was burned over his entire body and died within an hour. The remaining cases were all treated with morphine, heat and forcing fluids. The dead epithelium was removed from the burned area and dressings saturated with a 2½% aqueous solution of tannic acid were applied.

The white blood count two hours after entry ranged from 70,000 to 12,000, corresponding closely with the severity of the burns—the higher counts going with the most serious cases. The four patients with a white blood count of 23,000 or higher all died.

The hematocrit readings showed a concentration of the blood with a finding of 70% twelve hours after entry in the patient with the most extensive burn. There was a steady fall to normal limits in the course of four days under treatment.

The sedimentation rates were slowed and in two cases there was essentially no sedimentation of the cells at the end of an hour for three days after entry. The later sedimentation readings fluctuated roughly in proportion to the amount of toxic absorption and the resistance of the patient.

A few readings were made of the serum protein content in the more severely burned cases and showed values below normal which suggests that the concentration of the blood comes from a leakage of serum out through the damaged capillary walls.

The plasma chlorides were kept essentially normal with treatment which included intravenous and subcutaneous administration of saline solutions.

The urine showed albumen casts and a few red

blood corpuscles according to the severity of the case. With the two late fatalities there was a definite retention of chlorides and fluid as shown by the discrepancy between intake and output and some edema developed. These two cases showed a marked terminal rise in the non-protein nitrogen of the blood and with this there developed an acidosis as shown by the lowered alkali reserve. There was no evidence of an early acidosis in any of the cases.

In presenting his paper Dr. Cutler first discussed his interest in the whole field of postoperative pulmonary complications and explained how in his repeated studies of this general field he had gradually come to feel that a large percentage of all postoperative pulmonary complications are due to embolism from the operative wound. He stated that the wound itself is the only factor common to all surgical procedures that all forms of pulmonary complications occur following operations under local anesthesia as well as under general anesthesia, that the increasing perfection of the technique of administering inhalation anesthetics has not reduced the percentage of such complications, that such complications occur more frequently in those cases operated upon by surgeons whose control of bleeding and whose general technique is less careful and exact, and that the frequency of these complications seems to be higher when the part operated upon is a mobile part of the body.

He and his associates began their experiments dealing with the production of abscess of the lung in 1925 with the hope that by utilizing this particular postoperative complication which could be studied well by the X-ray and by postmortem findings they could show the importance of embolism from the wound in the production of postoperative pulmonary complications. Those associated with him in this study are Drs. Schlueter, Weidlein, Holman, Holloway and Herrman and their investigations have continued over the past three years.

The investigations began with an attempt to reproduce abscess of the lung by placing in the bronchi bacteria and foreign bodies using a bronchoscope in order to introduce such material into the finer ramifications of the pulmonary tree. Such experiments were uniformly unsuccessful as was expected from the failure of others who had previously made similar attempts. The next step was to set up a typical experiment where bacteria could be brought to the lung via the blood stream without dissemination. In the first experiments the bacteria were in closed gelatine capsules but it was found more satisfactory to use a small excised segment of the femoral vein. This was filled with bacteria both ends were tied off and the embolus thus formed was freed into the jugular vein and washed down into the heart with salt solution. Such infected vein segment emboli were held up in the pulmonary arterial tree and abscess of the lung resulted in a great percentage of such experiments. In order to visualize the exact area where these emboli lodged small pieces of lead filing were added to the vein segment embolus and the investigators were thus able to study roentgenologically the reaction and eventual central liquefaction in the lesions which resulted.

A second series of experiments was set up in which a simple infected clot, but this time not covered with a vein segment, was freed into the venous circuit. Such free infected clots usually resulted in a diffuse

Gastro-Enterostomy and Closure of the Abdomen without Drainage'

9 Dr Charles C Lund "Relation of the Basal Metabolism to the Action of Morphine"

10 Dr Louis J Ullian 'Basal Metabolism in Icthyosis A Severe Diabetic with Abscesses at Site of Insulin Injection"

11 Dr Percy B Davidson "Uicer of Esophagus"

MEETING OF THE NEW ENGLAND HEART AS SOCIATION WITH THE HARTFORD COUNTY MEDICAL SOCIETY

APRIL 3, 1928

Hunt Memorial Library
38 Prospect Street, Hartford, Conn

4 00 P M CLINIC

1 Heart Disease and Hypertension Dr William H Robey, Boston

2 Heart Disease and Pregnancy Dr Burton E Hamilton Boston

3 Heart Disease in Children Dr Hyman Green Boston

8 00 P M

1 The Heart in Anaesthesia and Surgery Dr H M Marvin New Haven

2 The Present Status of Cervical Sympathectomy Dr Samuel A. Levine, Boston

3 Paravertebral Alcohol Injections in Angina Pectoris Dr Paul D White, Boston

HARVARD MEDICAL SOCIETY

The Harvard Medical Society held a regular meeting on Tuesday March 13 1928, at 8 15 o'clock at the Peter Bent Brigham Hospital After the presentation of cases, Dr Harvey Cushing introduced Dr Richard P Strong who took for his subject The Harvard African Expedition of 1927 with reference to Biology and Medicine'

The first case was presented by Dr Taylor for the medical service A girl of 13, five years ago began to have increased thirst and appetite and was more tired than normal At that time she was treated by the Childrens Hospital for diabetes Eleven months ago she came into the hospital in diabetic coma and with a pneumonia She was brought out of coma satisfactorily with intensive insulin treatment and has been followed by the Outdoor Department diabetic clinic She came into the hospital for a readjustment She presented a difficult problem typical of young diabetics With large doses of insulin to bring down the high blood sugar she had a characteristic insulin reaction, so that orange juice had to be given She varied from day to day in her blood sugar as much as 0 30% Her blood sugar seemed to be lowest in the afternoon She was presented to show the difficult problem involved in controlling and balancing her diet and insulin

The second case was presented by Dr Farber for the surgical service The patient was an Irish widow of 72 who had always been strong and healthy till six days ago when she was suddenly taken with nausea vomiting and generalized abdominal pain After staying in bed for two days, she saw a doctor who sent her into the hospital With the diagnosis of appendicitis she was operated on immediately and an acute appendix with perforation was

found Records of the hospital show that of 1000 appendectomies done since 1916, only 3 were between 70 and 80 years of age The patient was presented because she represented 0 3% of operated cases and because she was getting along so well

Dr Strong's account of the expedition was a general one and only included scientific allusions where they came in the natural sequence of the story Aided by motion pictures, he carried his audience through a survey of Liberia and on across the continent through the Belgian Congo

It was thus planned that America should be interested in Liberia for four reasons First, we founded it second, we are the sole advisers now third it is an important source of our rubber supply fourth the internal loan to Liberia has been refunded and a new loan of five million dollars has been negotiated through a New York bank

The country of Liberia was induced to take care of the freed slaves Twenty six years after the first settlement or in 1847, a constitution was adopted similar to that of the United States, though the country is only a republic in name In addition to the seventeen different tribes of the interior, there are ten to twelve thousand American negroes in the capital and surrounding towns The climate is very conducive to fevers the rainy season lasting from May to November The water supply is obtained from wells and cisterns A survey of the children showed that 86% had malarial parasites in their blood and 36% had large spleens In the market places many cases of yaws and gangosa were evident Umbilical hernias were common Much trypanosomiasis of various kinds and sleeping sickness were evident In certain animals killed, cysticercus was found in the liver

A description of big game hunting was also given and many excellent pictures shown in illustration Some of the entomological and botanical findings of the expedition were outlined showing the diversity of interests in the expedition

The meeting was unusually well attended and of exceptional interest.

SOCIETY MEETINGS

March 29—Meeting of the New England Section of the American Academy of Physiotherapy Detailed notice appears on page 370 issue of March 22

March 30 and 31—Second Annual Conference on Public Health Complete notice appears on page 224 issue of March 15

March 31—Boston City Hospital Clinical Meeting Complete notice appears on page 321 of this issue

April 3—Meeting of the New England Heart Association with the Hartford County Medical Society Complete notice appears elsewhere on this page

April 3—Meeting of the New England Society of Psychiatry Complete notice appears on page 321 of this issue

April 3—Boston City Hospital Nurses Alumnae Association Complete notice appears on page 321 of this issue

April 12—Massachusetts General Hospital Staff Meeting Detailed notice appears at the end of Massachusetts General Hospital Staff Meeting report on page 321 of this issue

June 15 22—Convention of the Catholic Hospital Association Complete notice appears on page 1597 issue of February 16

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

May 2 1928 (Wednesday)—Annual meeting at Haverhill 12 30 P M at the Haverhill Country Club Brickett Hill Gile Street Haverhill

May 3 1928 (Thursday)—Censors meet for examination of candidates at Hotel Brattle 95 Main Street Haverhill at 2 P M Candidates should apply to the Secretary

J Forrest Burnham M.D. 567 Haverhill Street, Lawrence at least one week prior

Essex South District Medical Society

April 11 (Wednesday)—Essex Sanatorium Middleton Clinic at 5 P M Dinner at 7 P M

Dr Raymond S Titus Obstetrical Emergencies
Discussion by Drs. J J Egan of Gloucester and A. T Hawes of Lynn 10 minutes each and from the floor

May 3 (Thursday)—Censors meet at Salem Hospital for the examination of candidates at 3 30 P M Candidates should apply to the Secretary Dr R E Stone Beverly at least one week prior

May 8 (Tuesday)—Annual meeting Detailed notice appears on page 1437 issue of January 26

Norfolk District Medical Society

May 3—Censors meeting Roxbury Masonic Temple 4 P M Applications will be mailed by the Secretary upon request. Detailed notice appears on page 271

May 8—Annual meeting Details to be announced

Suffolk District Medical Society

Combined meeting of the Suffolk District Medical Society and the Boston Medical Library will be held at the Boston Medical Library 8 The Fenway at 8 15 P M, as follows

April 25—Annual meeting Election of officers Prof. Julius Bauer Professor of Medicine in the University of Vienna, and Physician-in-Chief to the Polyclinic will deliver an address His subject will be announced later

The medical profession is cordially invited to attend this meeting

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear

BOOK REVIEWS

De Lamar Lectures—1926 1927 Edited by CHARLES E. SNYDER The Williams & Wilkins Company Baltimore U S A.

In this book of 225 pages are reproduced a series of lectures given at the School of Hygiene and Public Health of the Johns Hopkins University pursuant to a provision of the will of the late Joseph R. De Lamar 'to give the people of the United States generally the benefits of increased knowledge concerning the prevention of sickness and disease and also concerning the conservation of health by proper food and diet

The subjects comprise Natural immunity in its significance for epidemiology The variability of bacteria with special reference to infectious disease Heart disease from the point of view of public health Some pioneers in parasitology Tularaemia Etiology prevention and serum treatment of Measles The preparation and use of scarlatinal streptococcus anti toxin Bovine tuberculosis in its relation to man The personal factor in coal mining Environment in relation to health Some criteria of the results of malaria control measures

The lectures have been carefully prepared by men who have made international reputations for proficiency in their respective fields and the book offers a convenient means of obtaining up-to-date information regarding the subjects to which the lectures relate

Diagnosis and Treatment in Disease of the Lungs By FRANK E. TILCOTE, M.D., and GEORGE FLETCHER, M.D. Oxford Medical Publication

This book is a small volume of 258 pages divided into eleven chapters Its aim is to place before the senior student or the young practitioner the ordinary

methods of diagnosis and treatment of the commoner forms of lung diseases in such manner as to prove helpful to him in his practice

In Chapter I is taken up the general anatomy and physiology of the lung deformities of the chest, and the arts of palpation percussion and auscultation Chapter II is devoted to bronchitis The amazing statement is made in this chapter that in England and Wales this disease causes more deaths than pulmonary tuberculosis The only answer to this statement probably is that the diagnosis or at least the reported diagnosis must be wrong in order to make such an impression as this for certainly except in the case of the very young and very old bronchitis does not cause death One notes in this chapter and throughout the book formulas for long and elaborate prescriptions of the old shotgun type which are no longer used in this country

Chapter III is devoted to bronchiectasis In the treatment of which the statement is made that creosote is the most useful drug either taken internally or by an inhaler Not only is creosote advised here but in various lung conditions This is certainly harking back to the dark ages as creosote as a therapeutic agent in lung diseases has long since been thrown into the discard where it belongs

In Chapter IV devoted to emphysema asthma and hay fever many long and elaborate prescriptions often containing 6-7 ingredients are given It is to be taken for granted, of course that neither hay fever or asthma can be successfully considered in the compass of a few pages as is attempted in this instance In Chapter VI, devoted to pleurisy the writers wisely emphasize the fact that bronchial breathing over a dull area especially in young children does not rule out the presence of fluid Later on considering gangrene of the lung various prescriptions are given each one containing creosote The Chapter on pneumonia is rather elementary which is perhaps a good fault Pneumoconiosis and allied conditions are simply touched upon and the subject of tuberculosis and its diagnosis and treatment is taken up in about 60 pages so that it is naturally considered in a very brief and cursory way

With the exception of its tendency to use the elaborate multifold prescription and to stamp with approval the use of creosote this little book will certainly do no harm and as it is clear and easy reading may do a certain amount of good

Crawford W Long and the Discovery of Ether Anesthesia By FRANCES LONG TAYLOR. Paul B Hoeber Inc New York, 1928 xiii + 237 pages 111

Mrs Taylor the daughter of Crawford W Long has written a very sympathetic account of her father's life There is of course special emphasis put upon his use of ether as early as March 30 1842 to produce insensibility at the time of an operation All the facts of the matter are clearly set forth and one feels entirely justified in considering Crawford Long as the first man to use ether for the purpose of producing surgical narcosis The controversy which raged for so many years in Washington and elsewhere in regard to the priority of the discovery of ether is no longer of special importance to the medical profession Our lack of knowledge however of Dr Long the kindly country practitioner who lived in Georgia just prior to and during the Civil War entirely justifies the publication of this tribute from a devoted daughter to her father

well as of a structural and of a functional diagnosis. Almost everyone of you is familiar with the older pathological diagnosis (like mitral disease, enlarged heart, "myocarditis", and pericarditis), but as important as that may be, how inadequate it now appears after Mackenzie's insistence also on a functional diagnosis, and after the present-day demand for an etiological diagnosis, obviously of such great significance. If we don't know the cause, let us say so—it is a healthy habit. We may write after a given case "cardiac enlargement, or auricular fibrillation, of unknown cause." More and more we shall learn the reasons.

2 *Rheumatic infection*, as a very frequent and important cause of serious heart disease, has been more and more investigated and found to be not infrequently an insidious invader hard to recognize sometimes in early childhood and persisting in subacute form, like tuberculosis or syphilis, for years. The rheumatic heart has been found most frequently among the natives of colder climes, among the poor, and in certain families. To control it is one of our chief problems for the future.

3 *Effort syndrome*, the nervous heart, neuro-circulatory asthenia or the soldier's heart, although always in existence and recognized in the past, as by Da Costa after the Civil War, was not known to the average doctor until its great frequency in the World War brought it to the notice of all. Many young people, and older too, afflicted with this annoying complaint before the war, had been told they had heart disease, and even now in some places it is still labelled as myocarditis or mitral stenosis. Its coexistence with organic heart disease in frequent nervous patients also needs recognition so that the heart disease may not be blamed and treated for symptoms not of its making. Faintness, dizziness, easy exhaustion, nervousness, sweating and excessive sighing when present aid one in the evaluation of such symptoms as palpitation, dyspnea and heart pain.

4 *The thyroid heart*—the irritable heart due to hyperthyroidism with its frequent absolute arrhythmia and in severe chronic cases actual congestive heart failure—has become now widely recognized and more properly treated. Hamilton and Lahey in particular have shown the frequent restorative treatment by operation in cases where digitalis therapy and other measures have failed.

5 *Subacute bacterial endocarditis*, one kind of "malignant endocarditis" of old, and probably best called *streptococcus viridans* endocarditis from its cause, is now widely recognized as a serious, almost always fatal complication occurring particularly in rheumatic (less often in congenital) heart disease. Though as yet we have no cure, we have advanced a long way in recognizing the disease when it appears. It is a slow fever lasting for months, associated often with secondary anemia, embolic phenomena,

splenomegaly, clubbing of the fingers, positive blood cultures, and terminating fatally.

6 *Coronary thrombosis*, frequently complicating angina pectoris and often fatal in a few days, with recovery for years in less severe cases, was diagnosed clinically by but a very gifted few prior to ten years ago. Even Mackenzie called it angina pectoris and others have called it acute indigestion or grappe. Now general practitioners are very apt to recognize the condition and seem to have a good knowledge of its significance and treatment. A prolonged attack of severe substernal oppression in a middle aged or elderly person lasting for hours, requiring morphine for relief, and often followed by fever and leucocytosis for a few days, spells a cardiac infarct from thrombosis of a narrowed sclerotic coronary artery, usually the descending branch of the left. If the infarct is large, intra-cardiac thrombosis with or without embolism, pericarditis, congestive failure, paroxysmal auricular fibrillation, acute cardiac dilatation and sudden death may follow. In the past, more than a few days for recovery were rarely recommended, now we know that weeks or months are necessary before the infarct is well healed.

7 *The hypertensive heart* is no longer called routinely Bright's disease, cardiorenal disease, or myocarditis. We recognize that essential hypertension is a strain on heart, kidneys, and the cerebral circulation, but is often supported for many years without symptoms. The heart hypertrophies and often fails, especially if there are other complications like coronary disease and uremia. The cause of essential hypertension is as yet unknown, though every year new theories and new remedies appear. No therapeutic measure has yet succeeded. Before ten or fifteen years ago, it was taken for granted at the Massachusetts General Hospital that hypertension meant chronic primary nephritis—now we do not know what it means.

8 *Congenital heart disease* is still much of a mystery, but the recognition of its varieties especially through the work of Maude Abbott has been much advanced. We are a little more apt to be right when we hazard a structural diagnosis than we were ten years ago, and in general it has been shown during this decade that the prognosis is in large measure dependent on the degree of cyanosis.

B STRUCTURAL AND FUNCTIONAL DIAGNOSIS

9 There have also been advances in methods of diagnosis, even in the application of the *stethoscope*. The *mitral diastolic murmur*, clearly recognized by but few ten or more years ago, is now widely appreciated. Even Mackenzie taught that the murmur of mitral stenosis was a presystolic murmur, with an earlier diastolic murmur added to it in extreme cases. Today we know that the reverse is the case, the so-called mid-diastolic murmur generally appearing first, with the presystolic phase added if

the stenosis becomes greater in degree or if the heart action is accentuated by exercise. The failure, years ago, to diagnose mitral stenosis in the presence of auricular fibrillation because the presystolic murmur was not heard is uncommon today among well informed physicians. Mackenzie told me, a few years ago, that we were hearing too much but I feel quite sure that he heard too little, perhaps in part because of his devotion to the old wooden monaural stethoscope.

10 The *third sound of the heart* a frequent normal apical finding, was rarely appreciated before ten years ago. Now we expect it, particularly if we listen with the bell chest piece in the recumbent position. Its marked increase means usually either mitral stenosis, in which condition it is frequently followed by the mitral middiastolic murmur, or the extra sound of the very important and serious protodiastolic gallop rhythm of heart failure. The third sound is to be clearly differentiated from a reduplication of the second heart sound. Sometimes it is even accompanied by a palpable shock at the cardiac apex. We heard little of this third heart sound ten years ago.

11 The *systolic murmur*, too, is fitting into its proper place. Years ago it was thought by some to be a serious sign. Then during the war it was minimized. At the present time we realize that if loud, whether at apex or at aortic area, it is not normal and is often an important sign of heart trouble and ill health, though sometimes temporary. Mitral regurgitation as a diagnosis gave place ten years ago to mitral stenosis, but once again it has revived, apparently in its proper value, neither to be magnified nor minimized. A pulmonic systolic murmur is, however, still regarded, unless marked, as a normal finding.

12 Even *percussion of the heart* has in practised hands been revived as a valuable method of determination of heart size and shape. Not only in the absence of an X-ray is it useful, but it may be more accurate than the X-ray if the latter has not been obtained with the greatest care, and such is not rarely the case. Therefore percussion should always be done, if for no other purpose at least to check the X-ray. Two points in particular of much value respecting percussion of the heart have arisen in recent years and yet they are but little known generally. For me they have proved invaluable. One is the use of the midclavicular line as a guide to heart size in a given individual. This line is drawn down over the precordium vertically from a point midway between the midsternum and the outer end of the left clavicle. This line is a far more constant and reliable index than is the nipple line. If the apex impulse and left border of dulness to percussion in the upright position are found outside this midclavicular line en-

largement or displacement of the heart is almost certain, even though these same findings are inside the nipple line. The second new point in recent years of much value in percussion is the determination of the presence or absence of increased dulness in the third interspace to the left of the sternum. Increased dulness there in the absence of general cardiac enlargement means almost always either chronic mitral disease or congenital patency of the ductus arteriosus, with enlargement of the infundibulum of the right ventricle or of the pulmonary artery. Such enlargement may be found even when the apex impulse is in its normal position.

13 The introduction of *sphygmomanometry* routinely into clinical medicine some twenty years ago gave rise at first to some false notions such as that already mentioned that high blood pressure was due to Bright's Disease. Great attention was paid to very slight changes in pressure readings in individual cases, and the idea got about that the normal pressure was 100 plus the age of the subject as recorded in millimeters of mercury systolic. Largely as the result of thousands of insurance examinations, it has been learned that at any adult age a systolic blood pressure of 110 to 120 is highly desirable and favorable for long life, if there has not been a sudden drop to this figure from a much higher one.

14 One of the most important signs we possess in clinical medicine is that of *alternation of the pulse* (pulsus alternans) as determined most readily by blood pressure study. It should always be looked for and when found (except with extreme paroxysmal tachycardia) it is a sign of serious, sometimes speedily fatal, heart weakness. It consists of alternating strong and weak beats evenly spaced in time or with the weak beats late, never early. Its frequency was not realized until recent years.

15 One other recent finding by the auscultatory method of blood pressure estimation is the so-called *auscultatory gap*. This gap consists of an interval of silence or dulled tones, for about 30 millimeters of mercury, a little below the systolic pressure, and occurring especially in aortic stenosis or hypertension. It apparently is of little moment except that it may lead to error, the lower end of the gap being mistaken for the systolic pressure or the upper end for the diastolic pressure. Palpation of the radial pulse as a check during auscultatory sphygmomanometry will obviate the error.

16 The use of the X-ray in the diagnosis of cardiac and aortic disease has progressed rapidly. Fluoroscopy and teleroentgenography, and orthodiagraphy have been perfected, and, if well done, give us helpful information not only about the size and shape but also about the force and rhythm of the heart. The oblique views and rotation of the patient while being observed fluoroscopically are often helpful though frequently

neglected Mitral disease, aortic disease, patency of the ductus arteriosus, hypertension, aortic sclerosis, and pericardial effusion all give more or less characteristic pictures they still need further study

17 *Graphic methods* have now settled down to their proper place in cardiac diagnosis, and useful indeed have they proved. At first regarded by many as toys, the sphygmograph and polygraph in the hands of Wenckebach and Mackenzie proved their worth in paving the way for the introduction of the electrocardiograph. Even yet, now and then, when pulsus alternans is suspected or help in the analysis of obscure cardiac mechanisms is wanted, the mechanical pulse tracing is valuable. It is, however, the *electrocardiogram* that teaches us the most, and more information comes from the study of the shapes, durations and amplitudes of the various waves of the electrocardiogram than from the analysis of arrhythmias for which it was at first obtained. The last ten years have crystallized this added information for us, though a few dark corners still remain. The condition of the myocardium may at times be better revealed by the electrocardiogram than by any other method, especially if coronary disease is in question. Intraventricular or bundle branch block, flattening or inversion of the T waves, very low voltage of all waves, and abnormal deviation of the electrical axis all help in our analysis of a given individual. Even a diagnosis of myxedema may be at times fairly hazarded by inspection of the electrocardiogram alone.

18 *Other methods of study* of the circulation have been introduced or revived during the past ten years, such as that of the capillaries, of blood flow and blood gases, of venous blood pressure, and of the vital capacity of the lungs. Exercise tests and other methods to judge cardiac capacity have been described. All of these special studies have been helpful in understanding physiological processes and occasionally in explaining symptoms and signs, but for routine use in practice they have not become necessary. It is helpful to know why in acute or chronic congestive heart failure the orthopneic position is the most comfortable, due to the decrease of blood flow and of pulmonary congestion, with relative rest for the heart. It is of interest to know what the venous pressure may register in centimeters of water and what the vital capacity in centimeters of air, but for diagnosis, prognosis and treatment this information is not essential. There has been no notable advance in the past decade in the analysis of blood, urine, or renal function of especial value in the study of heart disease or of cardiovascular physiology, except that of blood gases by Barcroft, Van Slyke, Haldane, Henderson, Bock, and others. Of especial physiological interest has been the study of capillary circulation by

Krogh, Richards and Lewis, and of the capillaries and Thebesian vessels of the heart by Wearn.

C TREATMENT

19 The discovery that behind auricular fibrillation and auricular flutter there lies a common mechanism called the "*circus movement*" has been an interesting and important development of the past decade. Applying the findings of Garrey and of Mines to the mammalian heart, Lewis and his co-workers demonstrated that a wave of contraction, travelling incredibly fast, revolves about the great veins of the right auricle, giving rise to auricular flutter if at about the rate of 300 to 400, with ventricular rate at $\frac{1}{2}$ this and regular, or to auricular fibrillation if at rates over 400 (to 600), with ventricular rate very irregular and rapid (about 150). The influence of various drugs and stimuli on the circus movement has been studied but it was the chance observation of a layman, himself a patient of Wenckebach's, which revealed the most dramatic effect. He found that quinine which he took for other purpose tended also to prevent paroxysms of the circus movement (auricular fibrillation) in himself. During and after the war the effects of the various cinchona alkaloids on the heart were studied, and the result has been the introduction into cardiovascular therapy of the most valuable drug since Withering's vital work on digitalis (with the possible exception of the nitrates). This drug is *quinidine sulphate*, an isomer of quinine. It in most instances has an important effect on the circus movement, largely to prevent its appearance and to abolish it when present. It is a drug that must be used carefully and intelligently, and of course in no way is a substitute for digitalis.

20 It may sound surprising to say that one of the greatest advances of all in the past decade has been the more intelligent use of *digitalis*, but it is none the less true. Relatively few doctors had heeded the recommendations of Withering and of Mackenzie to give the drug in ample dosage, and still fewer continued its use in sufficient rations. The widespread introduction of the ideas of digitalization and maintenance of digitalis effect is very recent. I can recall that when I was interne fourteen years ago it was the custom to give courses of digitalis, practically amounting at times to digitalization over an interval of a few days. These courses when needed, as in cases of auricular fibrillation, would result in marked improvement for the time being. The drug would then be omitted and gradually symptoms and signs of trouble would return, often incapacitating the patient, endangering his life, and necessitating another course of digitalis. Now we largely avoid these relapses, or at least postpone them often for years, by the very simple and effective method of daily rationing. It has been found, for example, that

a tablet or pill of $1\frac{1}{2}$ grains (0.1 gram) of a standardized digitalis leaf three times a day for a week will slowly but satisfactorily digitalize, or saturate, the average adult, then the administration of one such tablet or pill daily for weeks, months or years will maintain such saturation and beneficial effect in the same average adult until the heart finally wears out, until the drug is no longer needed, or until some other disease ends the story. This daily ration makes up for the amount of the drug excreted or destroyed each day. Individual variations from these averages, of course, occur and much common sense must be used, but the general principles are invaluable. Sometimes more rapid digitalization is needed and the week's schedule can then be compressed and even given intravenously or subcutaneously, if necessary. If the tincture is used, ten times the amount of the powdered leaf is figured, but it is a bit more clumsy, and there is often the confusion between drops and minims. There seems no need ever to use the infusion, or to bother with other drugs of the digitalis group like squill.

It is still problematical as to how much good, if any, small doses of digitalis may do—the so called tonic doses—say of a grain or a half grain or 5 or 10 drops of the tincture, daily without preliminary digitalization. Certainly such doses will not save lives when the drug is badly needed in larger doses.

Much digitalis is still wasted and given without justification in all sorts of conditions. It is indicated in the treatment of congestive heart failure, and of auricular fibrillation and flutter. It may be used as a therapeutic test. But it is a drug that should not be employed routinely when a diagnosis of heart disease is made, or in preparation for operations, in operative or post-operative complications, or in infectious diseases.

One further considerable advance in digitalis therapy that has come in the past decade is the vastly more satisfactory standardization of nearly all digitalis preparations on the market. In general we may now select the least expensive of such preparations, provided only they are reasonably fresh, and not feel that we are dependent on costly imported drugs.

21 Recent advance in the drug therapy of heart disease other than in the use of quinidine and digitalis has not been notable. Probably the introduction of *novasurol* (merbaphen) and of *salyrgan*, mercury derivatives, by intramuscular injection, for obstinate anasarca in congestive failure is the most important of the newer therapeutic measures (except for quinidine). They may be called improved successors to the powerful diuretic drug calomel given by mouth often with great success by our forbears. The saline diuretics have been less useful, and theobromine and theocin still remain the diuretics of first choice if digitalis fails to clear oedema.

The use of theobromine and ephedrine to re-

duce angina pectoris and to improve coronary circulation has become widespread but often it proves ineffective.

22 Finally, we should regard for a moment the introduction of *surgical procedures* in the treatment of cardiovascular disease. Some, like periarterial sympathectomy and valvulotomy for mitral stenosis, have been disappointing, but two measures need further discussion, namely *cervical sympathectomy* and *paravertebral alcohol injections*, both for the treatment of obstinate or incapacitating angina pectoris. These procedures still remain in the experimental stage and apparently will continue so until more is known of the exact nature of angina pectoris and of the relations of heart and blood vessels to the nervous system. Enough has been done nevertheless, to show that a certain number of cases have been to a high degree relieved of discomfort by either measure. In neither case does it seem likely that the underlying processes of coronary or aortic disease are stopped or even diminished. Heart failure and death may occur perhaps as rapidly as if the operation or injection had not been made. In one case that I know of, cervical sympathectomy, done by Leriche himself with successful relief of most of the distress, was followed soon by congestive failure and death, perhaps, as Mackenzie had warned, because the subject no longer was forced by the pain to keep from being too active. Both cervical sympathectomy and paravertebral alcohol injections may be regarded as symptomatic treatment and by no means as cures. Just as symptomatic therapy has proved of great value in the practice of medicine in general, so here, too, in the treatment of obstinate and incapacitating angina pectoris these two measures should be fully considered and now and then practiced, the alcohol injection method preferably (so far as we can tell at the present time) since in skilled hands it is the simpler. Neither procedure should be urged until medical measures (rest and drugs) have been exhausted, for sometimes very disagreeable hyperesthesia and paresthesia lasting for weeks may follow the operation or injection and for a while be even more disagreeable than the angina pectoris itself.

I have tried to sketch the outstanding progress in the study and treatment of cardiovascular disease in the past decade. I have appreciated tremendously the opportunity that I have had by concentration in the field to learn first-hand a little of the truly thrilling strides forward. What the next decade may have in store for us we can only conjecture, but certainly the most vital advance will come through a clearer understanding of the causes of cardiovascular disease leading eventually to their prevention.

THE APPLICATION OF PATHOLOGY TO SURGICAL PROBLEMS*

BY ERNEST AMORY CODMAN, M.D., F.A.C.S.†

AS I presume the above title refers to everyday surgical problems, I will try to define for you what I believe to be the things which the average surgeon expects of the pathologist. In the first place, he expects him to be responsible for the care and for the behaviour of the ram that crops the lawn near the laboratory. He expects to order a Wassermann, in a lordly way, on any patient he wants to, and he supposes that ram will oblige the pathologist, but just how he does not know. He expects all the other live stock, rats, mice, rabbits, guinea pigs, monkeys, etc., to be sustained by the department, and if he has a sick dog of his own he will seek the pathologist's advice. He wants to be able to order any suspicious fluid "put through a guinea pig" for tuberculosis, but has little idea of the trouble involved. When rabies, glanders, anthrax, or any especially infectious or dangerous disease appears, he expects the pathologist to know how to meddle with it without personal danger and to keep his old cultures safely corked up. Of course the department should keep in its ice-box ready for immediate use the appropriate sera for these awful things. Occasionally the surgeon opens the abdomen, puts in his thumb and pulls out a plum in the shape of some unusual tumor. Then he expects the pathologist to show great interest, to regard him as a contributor to science, and to help him write a paper in which appear some beautiful microphotographs. When he removes the appendix in some chronic case, especially if the patient is prominent, he looks to the pathologist to do his best to find evidence of inflammation. If at an autopsy a lingering intra-abdominal sponge is detected, he expects to have it palmed. With only ten minutes to speak I cannot complete the list of what the surgeon expects and must summarize it by saying "everything which is absolutely necessary to the hospital work which is troublesome, dangerous, time consuming, or requires brains."

In turn, what does the pathologist expect of the surgeon? I have thought a long time about this and the answer is very nearly the same as that given by the mate to the captain on the good ship "Mozambique." Although he only asked for civility, he really also wanted appreciation, interest, encouragement and cooperation, and so does the pathologist.

So I take the liberty of somewhat reversing the title and will speak of things the surgeon can do to help the pathologist in his problems.

The minds of the pathologists I have known have been singularly direct and simple as well as patient and kind. That of the late Dr. Whitney was an example. How susceptible he was to

our interest in any pathologic specimen, and how glad he was to show us what he knew about it! How patient he was with us! Year after year he saw us making the same old mistakes because we would not take time to study our specimens. I am glad that at least Richardson, Mixer and others of the older generation gave him their respect and encouragement and were ready with their sympathy for his occasional mistake in the diagnosis of some dried, inadequate bit of tissue which the belated interne gave him the day after it was removed. His spirit of cooperation was inexhaustible and he helped us to write our papers as naturally and pleasantly as if it were a definite part of his work. Yet I think very few of us ever did anything for him. We took him for granted and leaned on him. He was too uncritical. It would have been better for us if he had flown into a passion when we lost a specimen, and told us flatly that we had perhaps robbed the patient of something more precious than any money we could pay back. The carelessness with which we failed (and this not infrequently) to properly fix and preserve pathologic specimens the examination of which might be of vital importance to the patients was astounding. And yet I am credibly informed that this generation is still subject to the same weakness. This is still a surgical pathologic problem of the first importance—that tissue should be immediately and properly fixed or sent to the laboratory. It is one for which the chief of the surgical service should be held responsible, one in which he can show his interest and give encouragement, sympathy and cooperation to the pathologist. I suggest an air-compression tube such as they have in large department stores, so that the interne can shoot the fresh tissue to the laboratory directly from the operating room.

Another problem is this: to so organize the work of the hospital that the pathologist will be informed of the clinical result of cases on which he has rendered a pathologic report. We go to the pathologist saying, "Is this bit of tissue malignant?" We seem to take it for granted that the microscope can tell by some definite characteristic the answer to this question with infallible certainty. This is sometimes true, but in many cases it is not, in fact when an experienced surgeon is in doubt from the gross appearances, the pathologist usually is in some degree also. The follow-up clerk might maintain lists of the records of cases of rare conditions, such as tumors of the testicle, neurofibromata or actinomycosis, so that at any time the pathologist met a rare tumor, the clinical experience of the hospital and of the laboratory could be combined and the most accurate prognosis possible could be given.

Prognosis from a given section varies with the

*Read before the Suffolk District Medical Society, January 25, 1919.

†For record and address of author see "This Week's Issue" page 365.

anatomic situation of a tumor. For instance the same histologic appearances would have an entirely different prognosis if from a tumor of the phalanx of a finger or toe than they would had the section come from the lower end of a femur. Metastasizing sarcomas of the phalanges are practically unknown, but atypical benign chondromata are common in these bones. If the pathologist were given a piece of skin containing an ulcer, the chance of its being malignant would be vastly different according to whether it came from the palm or dorsum of the hand. Cancer almost never appears in the palm. I have often thought that a decoction of palms and soles and phalanges might cure malignant conditions in other situations. At any rate, it is clear that any cross-indexing of pathologic specimens and clinical records should refer to the region as well as to the diagnosis of the lesion. It stands to reason that the more often the pathologist (and also the surgeon) is made cognizant of the fact of whether or not his prophecy is fulfilled, the more his experience will grow and the better his opinion will be. Thus, then, is another every-day problem where surgeons can cooperate with pathologists. If the surgical staff of a hospital requested the trustees to give to the record department sufficient clerical help to follow up every case on which the result was desired by the pathologist, I believe it would be cheerfully done.

The fundamental standard by which to take up each hospital problem, pathologic or surgical, clinical or financial is the good of the individual patient. The pathologist will take his rightful place in the balance if each individual patient is followed up to ascertain whether he has been treated efficiently. From this point of view it is my opinion that the hospitals of this country as a whole are overmanned surgically and undermanned pathologically. Perhaps I am biased by my experience with bone sarcoma, but I am sure that in one field the pathologists need help, for they make as many mistakes as the surgeons. At least I can say with confidence that in most large hospitals the transfer of one surgeon to the pathologic department, for the purpose of studying the histology of the rarer forms of malignant disease checked by the late results would be a step toward greater efficiency. But here we meet the almighty dollar, for the hospital pays the pathologist and the surgeon costs it nothing.

This surgical problem of paying the pathologist has become an important question since the American College of Surgeons has been pursuing the matter of hospital standardization. In their minimum requirements for laboratories they assert "that a uniform system of charges for laboratory work shall be enforced." In other words they recognize that laboratories must be partially self-supporting or hospitals will go without them. You will not get good men in your laboratories unless you pay them and the better you pay them the more likely are able young men to choose that branch of our profes-

sion. In the past, a considerable portion of a pathologist's earnings has been dependent on his relation to the busy surgeons of his community who have charged their patients for the pathologic report on tissue. Now, the report is more often a hospital custom and the fee is collected by the hospital and turned over to the pathologist. This is more as it should be since it becomes less personal and an ordinary matter of business. We can all show our appreciation of the value of the pathologist by throwing our weight in the scale for making his fee as large as possible and by insisting that every tissue removed shall be examined. In many cases this will be a useless expenditure but in some instances it will be a wonderful investment, for occasionally tissue which the surgeon does not even question will be found by the pathologist to be of signal importance. It is much more satisfactory for every patient to pay a small fee as a routine than for the surgeon to use his judgment as to which case needs a pathologic opinion, for there are some tissues which the surgeon might prefer not to have examined. I believe that this custom should be established in out-patient work also. The records of the Huntington Hospital will show many cases where the lack of examination of some little piece of tissue removed in an out-patient department was most unfortunate. I think that in exceptional cases among well-to-do people where his advice is of paramount importance we should also call the pathologist as a consultant and expect him to charge a consultant's fee.

We are apt to think of the pathologist as concerned only with the examination of tissue and with the making of post mortem examinations. In reality these are mere incidents in his real function, which is the study of the natural history of disease. He should seize on any method which will help him understand the course of disease. The X-ray is one of his tools as well as the microscope. The microscopic field is only a tiny, extremely thin bit of the whole, the X-ray plate is a mathematical projection of the relative atomic weights encountered by unswerving rays from a focus point. Both record truths about the morbid anatomy and method of progress of a bone tumor and add somewhat to what the eye can see during dissection or to what is to be learned from the clinical history and examination. Pathologists point out to me that the microscopic field is deceptive in that spindle cells in cross section look round, or that fixation and handling or poor staining have seriously altered the tissue, but they fail to appreciate that the roentgenogram is a projection picture and cannot be interpreted as a cross section or as a view of the dissected bones. Not understanding it they distrust it. In reality it is an extremely accurate method of attaining information if its essential nature is understood. No kind of picture that I know of shows as much of an object inside and out as does an X-ray stereograph. Now we need the invention of something par-

THE APPLICATION OF PATHOLOGY TO SURGICAL PROBLEMS*

BY ERNEST AMORY CODMAN, M.D., F.A.C.S.†

AS I presume the above title refers to everyday surgical problems, I will try to define for you what I believe to be the things which the average surgeon expects of the pathologist. In the first place, he expects him to be responsible for the care and for the behaviour of the ram that crops the lawn near the laboratory. He expects to order a Wassermann, in a lordly way, on any patient he wants to, and he supposes that ram will oblige the pathologist, but just how he does not know. He expects all the other live stock, rats, mice, rabbits, guinea pigs, monkeys, etc., to be sustained by the department, and if he has a sick dog of his own he will seek the pathologist's advice. He wants to be able to order any suspicious fluid "put through a guinea pig" for tuberculosis, but has little idea of the trouble involved. When rabies, glanders, anthrax, or any especially infectious or dangerous disease appears, he expects the pathologist to know how to meddle with it without personal danger and to keep his old cultures safely corked up. Of course the department should keep in its ice-box ready for immediate use the appropriate sera for these awful things. Occasionally the surgeon opens the abdomen, puts in his thumb and pulls out a plum in the shape of some unusual tumor. Then he expects the pathologist to show great interest, to regard him as a contributor to science, and to help him write a paper in which appear some beautiful microphotographs. When he removes the appendix in some chronic case, especially if the patient is prominent, he looks to the pathologist to do his best to find evidence of inflammation. If at an autopsy a lingering intra-abdominal sponge is detected, he expects to have it palmed. With only ten minutes to speak I cannot complete the list of what the surgeon expects and must summarize it by saying "everything which is absolutely necessary to the hospital work which is troublesome, dangerous, time consuming, or requires brains."

In turn, what does the pathologist expect of the surgeon? I have thought a long time about this and the answer is very nearly the same as that given by the mate to the captain on the good ship "Mozambique." Although he only asked for civility, he really also wanted appreciation, interest, encouragement and cooperation, and so does the pathologist.

So I take the liberty of somewhat reversing the title and will speak of things the surgeon can do to help the pathologist in his problems.

The minds of the pathologists I have known have been singularly direct and simple as well as patient and kind. That of the late Dr. Whitney was an example. How susceptible he was to

our interest in any pathologic specimen, and how glad he was to show us what he knew about it! How patient he was with us! Year after year he saw us making the same old mistakes because we would not take time to study our specimens. I am glad that at least Richardson, Mixer and others of the older generation gave him their respect and encouragement and were ready with their sympathy for his occasional mistake in the diagnosis of some dried, inadequate bit of tissue which the belated interne gave him the day after it was removed. His spirit of cooperation was inexhaustible and he helped us to write our papers as naturally and pleasantly as if it were a definite part of his work. Yet I think very few of us ever did anything for him. We took him for granted and leaned on him. He was too uncritical. It would have been better for us if he had flown into a passion when we lost a specimen, and told us flatly that we had perhaps robbed the patient of something more precious than any money we could pay back. The carelessness with which we failed (and this not infrequently) to properly fix and preserve pathologic specimens the examination of which might be of vital importance to the patients was astounding. And yet I am credibly informed that this generation is still subject to the same weakness. This is still a surgical pathologic problem of the first importance—that tissue should be immediately and properly fixed or sent to the laboratory. It is one for which the chief of the surgical service should be held responsible, one in which he can show his interest and give encouragement, sympathy and cooperation to the pathologist. I suggest an air-compression tube such as they have in large department stores, so that the interne can shoot the fresh tissue to the laboratory directly from the operating room.

Another problem is this: to so organize the work of the hospital that the pathologist will be informed of the clinical result of cases on which he has rendered a pathologic report. We go to the pathologist saying, "Is this bit of tissue malignant?" We seem to take it for granted that the microscope can tell by some definite characteristic the answer to this question with infallible certainty. This is sometimes true, but in many cases it is not, in fact when an experienced surgeon is in doubt from the gross appearances, the pathologist usually is in some degree also. The follow-up clerk might maintain lists of the records of cases of rare conditions, such as tumors of the testicle, neurofibromata or actinomycosis, so that at any time the pathologist met a rare tumor, the clinical experience of the hospital and of the laboratory could be combined and the most accurate prognosis possible could be given.

Prognosis from a given section varies with the

*Read before the Suffolk District Medical Society, January 25, 1925.

†For record and address of author see This Week's Issue, page 365.

nourished children extraordinarily active and happy, playing about in the snow in the Alps,—it is evident that the children have tuberculous lesions of the bones and joints. To those of us who are old enough to remember our hospital wards and out-patient departments of twenty-five years ago, a very different visualization is possible, pale, emaciated children with pinched faces, increasing deformities, abscesses amyloid degeneration, general military tuberculosis meningitis and death. A striking contrast looking first on this picture and then on that. This remarkable change is due perhaps to many things but in its production so-called heliotherapy has beyond a doubt played an important part.

In order to make reliable observations upon any form of treatment something must be known of the disease process under treatment especially of its cause and of the reaction of the human organism to that cause.

Surgical tuberculosis includes the manifestations of tuberculosis which by long established tradition have been regarded as surgical lesions that is, lesions which are so localized as to be amenable to surgical treatment. Notable in this group are the bone and joint lesions, kidney tuberculosis, glandular and skin lesions, eye infections, and rarer forms.

Tuberculosis is a disease process due to invasion of the organism by the tubercle bacillus.

In the various forms of the disease which are called surgical tuberculosis, the disease process has become localized in some tissue and gives local evidence of its presence. For instance, spinal column, hip, knee, ankle, involving both bone tissue and joint structures. The process of localization is accomplished by the blood stream. The tubercle bacilli, having gained a foothold in the glandular structures, are carried to the bone marrow or synovia and take up activity at these points. This, of course, is well understood, but nevertheless it is not generally realized that localized tuberculosis is only a sign of a general disease process.

The forward step which *heliotherapy* gave to the treatment of surgical tuberculosis depended entirely upon the realization that the local disease process is of secondary importance, and that the treatment of a tuberculous individual is the matter of prime consideration. That this is true, most of us can bear witness, remembering as we do the time when a child with Pott's Disease was treated with a brace or a plaster jacket, when a tuberculous hip or knee was treated by braces and radical surgical procedures.

Tuberculosis is now recognized as a disease process which must be fought by raising the powers of resistance to the highest possible level in the infected individual. Granted that the virulence of the tubercle bacillus does not greatly vary, shown by the experimental work of Eastwood and Griffith¹, and by Allen K. Krause² who says that the net result of many studies on virulence has been to emphasize all the more a

fixity of bacillary type and potentialities more marked perhaps than for any other known bacterium, then we must conclude that the variations in the disease process are due to a greater or lesser resistance in the individual. Zinsser³ has stated that all attempts at active immunization of man against tuberculosis have been entirely unsuccessful. "Fortunately for the human race the problem is being attacked along sanitary and hygienic lines attention to nutrition personal and community life, and is being attended by astounding results." Zinsser believes that the essential mechanism of resistance to the tubercle bacillus may be found in the activity of the cells making up the specific inflammatory reaction which is recognized as the "*tubercle*." There may be here formed a substance of an enzyme-like nature, certainly not identical with ordinary antibodies. It may be that the insolubility which is conferred on the tubercle bacillus by its waxy and lipidal constituents necessitates the production of a mechanism basically different from that which underlies the resistance to other bacteria, and it may be that the tissue mechanism around the tubercle is the part of the story which concerns resistance to the bacilli in their acid-fast condition. (Hans Zinsser, Shattuck Lecture Boston Med and Surg Jour, June 18, 1925.) Krause⁴ points out from his experiments on animals with tuberculosis that there is a definite ability to 'fix' the bacillus in the tissues. He regards this as a specific immune reaction produced only by infection with the tubercle bacillus, and that it represents an *allergy* or allergic state. Animals or human individuals who are in this state of allergy have a favorable reaction to re-infection quickly checking the spread of the disease. This allergic state is reduced by fatigue, anaemia and other bacterial infections. It seems justifiable to assume therefore, that any and all means at our disposal which may raise the individual resistance to tuberculosis are the means to be employed.

There is an abundance of clinical evidence that so called *heliotherapy* will raise the resistance of the tuberculous patient, especially in the localizations of the disease which are known as *surgical tuberculosis*. As has been suggested, there is a widespread belief in the wonderful results which follow exposure to the sun. The reasons for this belief may be summarized in a review of observations made during the summer of 1926 at the clinics of Rollier in Leysin, Switzerland, Sir Henry Gauvain at Alton, W. Rowley Bristow at Pyrford, and G. R. Girdlestone at Oxford, England, and at the New England Peabody Home for Crippled Children in Newton, Massachusetts, U. S. A.

Rollier has so frequently voiced his belief in the curative value of heliotherapy that repetition seems unnecessary. In his "*La Cure du Soleil*" (1915) his views are clearly stated and need no emphasis from others. In brief, the

allel to the staining of microscopic sections so that the various tissues will appear in appropriate colors. I have suggested to Dr. Tracy Mallory, at the Massachusetts General Hospital, that one of our surgical problems might be helped by the routine fluoroscopic examination of all bodies of patients who have died of cancer. Owing to the fact that there would be no danger of burning the patients, fluoroscopy could be carried on with a brilliant light and all the bones examined for metastases in a few minutes. I believe also much information could be obtained in this way on bodies on which no autopsy is allowed, especially if we injected the serous spaces with air or the vessels with opaque fluid. This might open up lines of investigation of considerable importance. At least it would furnish reliable statistics as to the frequency of bone metastases in the various forms of malignant disease.

Although pathologic opinion in individual cases is often the most important which the patient receives in the hospital and is therefore a necessity for efficient treatment, a far more important function of the pathologist is his ability to teach. Every man who practices medicine in any of its branches needs a sound training in pathology, but none more so than the surgeon. It is therefore a surgical problem to see that the supply of pathologists is kept up. So far as our influence on medical faculties and hospital boards goes, we should advocate adequate budgets for the pathologic departments and reiterate that the supposed advances in surgery of recent years are largely due to the pathologists and that our own daily work would be less effective if we had not had training in pathology. I think we older men can also do something in advising our assistants that a year or two in a laboratory where gross pathology can be studied and correlated with the histology will surely make a better surgeon. We surgeons must also accent our demand for a clinical tissue pathologist as opposed to one from the widening subdivisions of pathology which are now engaging attention, as serology, immunology, etc. If one looks over the journals of pathology, few articles on gross or minute pathology are seen. Practically the tissue pathologist is disappearing and it is a very important problem for surgeons to make an attractive place for him. Perhaps the answer will be to isolate the bulk of the surgery

of malignant disease into a specialty and let the surgeons do their own microscopy. The establishment of the tumor clinic at the Massachusetts General Hospital seems to foreshadow this. Greenough and Simmons are already competent pathologists for this work and are no doubt teaching assistants. I could prophesy a great career for any young man who had the foresight to start in now and make a daily round of the pathologic laboratories in Boston studying all cases of tumors removed and correlating them with the clinical histories. A few years of this and he would be indispensable in the community. If at the same time he made a test of the polychrome methylene blue method of fresh tissue diagnosis which is so strongly advocated by the Mayo Clinic but not accepted by our pathologists, he would make a valuable contribution. The pathologist must give us the best fresh tissue diagnosis that he can and not shirk the responsibility because paraffin sections are more sure than frozen sections. It is for us to decide whether the danger of his making a mistake is greater than the danger of metastases due to waiting several days for the paraffin. And it seems to me that since cooking is a good method of tissue fixation, exploratory excisions of tissue might be made with an electric tool or knife so that the tissue would be fixed as it is excised. Excellent muscle preparations may be made from a Sunday roast, why not cauterize your wound and fix your tissue ready for staining and section at the same move?

I have perhaps made some fanciful suggestions as my contribution to this symposium, starting with recommending a department store tube to shoot specimens from the operating room to the laboratory, colored X-ray stereographs, the use of palms and phalanges for therapeutic purposes, consultant's fees for pathologists and roast instead of frozen sections. However, the most fanciful is one which I have spoken of sometimes before—that it is not only the duty but for the interest of a hospital to follow up each and every patient long enough to determine the efficiency of the institution so far as that individual is concerned and to study the causes of failure with a view to avoiding similar errors in future. Internes then will not lose specimens, and pathologists and surgeons will seek their relative levels of importance. More sheep will crop the hospital lawns.

NEW ENGLAND SURGICAL SOCIETY

HELIO THERAPY IN SURGICAL TUBERCULOSIS*

BY NATHANIEL ALLISON, M.D., F.A.C.S.†

THE use of sunlight in the treatment of disease is not a new thing. The use of the word *heliotherapy* in describing sun treatment, however, is new, and about the use of this word

many newly-formed ideas and conclusions have clustered. The word *heliotherapy* has gained world-wide usage and significance, coming to mean to the minds of many the essential form of treatment in surgical tuberculosis. Indeed a mental picture is called up by the word *heliotherapy* which shows naked, dark brown well

*Read at the Annual Meeting at Manchester, N. H., September 30, 1922.

†For record and address of author see "This Week's Issue" page 365.

The results are equally good if not a shade better than the results at Leysin. One feels that Sir Henry Gauvain is also an enthusiast and an optimist, with a leaning toward the efficacy of artificial light in surgical tuberculosis. He, however, is modest in his optimism. He says:

"With regard to the final results of treatment it is difficult at present to make any very valuable estimate as the results must be gauged by their permanency. Up to the present they have been quite satisfactory."

Another thing one observes at Alton is the earnest attempt to discover by blood examination and careful physical records what changes are taking place in the individual under treatment. Judged by the results of treatment, one feels that Gauvain and his associates are justified in their optimism and enthusiasm. They deserve the great credit of demonstrating that surgical tuberculosis may be successfully treated at sea-level in a country with limited sunlight as well as in higher altitudes with plenty of sun. This in itself is a contribution to the subject of the first magnitude.

At Puyfard in England, W. Rowley Bristow also demonstrates the truth of this, as does Girdlestone at Oxford.

In England, the attitude of those interested is well put by Girdlestone as follows:

A tuberculous focus in a bone or a joint is obviously part of a deep-rooted disease serious in itself, crippling if there is delay, disastrous if there is neglect. Modern treatment means the use of rest, food and weather which if started in good time and kept up long enough will almost always bring about a cure. Modern treatment necessitates a special open air hospital and a staff experienced and technically expert. There is no need of sending patients to distant hospitals.

Our own experience at the *New England Palsy Body Home for Crippled Children* has demonstrated to us at least, that so-called heliotherapy is essential to the proper treatment of surgical tuberculosis. At this hospital, beautifully situated in the open country, every possible advantage is taken of sunlight. In the environs of Boston, at sea-level, with much cold wind and snow in winter, and a heavy annual rainfall, the Weather Bureau tells us that we have a yearly average of fifty-seven per cent sunshine that during November, December and January it falls to forty-eight per cent, and that June to October shows about sixty-three per cent of sunshine. Ghormley⁸ has shown by weight charts that the weight of the patients increases most in the months with higher percentage of sunshine, and we note without doubt a slowing up in the winter of each individual's resistance. However, it is clear to our minds that *heliotherapy* is successfully carried out. Indeed that our results run exactly parallel to those of Rollier and those in England.

To be more specific. We have noted that our cases of spinal tuberculosis as reported by Ghormley show the following success in improving deformity depends upon the regional

localization and upon the extent and duration of the disease. For instance, cervico dorsal, no improvement, upper dorsal, thirty per cent improved, mid-dorsal, fifty per cent improved, low dorsal and dorso-lumbar, sixty-six per cent improved, lumbar ninety per cent improved. The extent of the disease has much to do with this practically complete correction of deformity is possible where only two adjacent vertebral bodies are diseased.

Hips and knees have healed to the extent of allowing weight bearing function and with no active symptoms.

Tarsal improvement has uniformly responded by marked improvement.

Spina ventosa finally heals with little disturbance of function and surprisingly little deformity.

On the other side of the page however, we encounter instances of tuberculous bone and joint disease which do not respond to heliotherapy, which develop abscesses, have multiple infection, amyloid degeneration and either die of tuberculosis or of some intercurrent infection. Perhaps I am fair in placing this group at about five per cent of our cases.

Heliotherapy in our hands is somewhat similar to that practiced at Leysin. We believe it to be made up of the following constituent factors: rest, good food, fresh air, surgical protection to diseased areas, happy surroundings, and light both sunlight and artificial light. Added to this we have employed transfusion of blood with benefit in many instances. Heliotherapy therefore to our minds is a composite of many things which are aside from the light element not in any way connected with the sun's rays. This combined effect of many factors produces good results because by it the resistance of the individual to tuberculosis is raised to a point which represents a lessening of the power of the bacillus to invade new territory, and a heightening of the power of the tissues to wall off and to fibrose the areas already occupied.

The end results of heliotherapy are as yet to be estimated. How much and how permanent healing takes place we do not know. Enthusiasm over what is now accomplished at institutions where these methods of treatment are carried out may lead to the belief that tuberculosis in its surgical manifestations is a conquered disease process. Disappointment it seems will surely be the result of this belief. At present surgery has a definite part to play in the cure of tuberculosis. We know enough of the healing process in the tissues to realize that bone and joint destruction is the typical lesion of this disease. We know also that the healing of the lesions require the filling in of the destroyed areas by fibrous tissue. Also that joint cartilages once destroyed are not in any sense regenerated, and that ankylosis in good position is a fortunate result in many instances. Operations designed to assist nature in this healing are useful and

impressions gained by a visit to his clinic are as follows

Surgical tuberculosis is absolutely cured by heliotherapy

The sun's rays act most effectively at an altitude of three thousand to five thousand feet above sea level

Artificial light is valuable, but it is not to be compared with the rays of the sun.

Climate has influence, in that bracing fresh air is valuable

The treatment, to be most effectual, demands an abundance of sunlight and exposure of the skin to the sun

The exposure of the skin, making use of the skin as an organ, is of the greatest importance. The skin has powers of elimination, circulation, innervation, and nutrition. Where the skin is well browned, and its capillaries are used to draw the blood from the deeper layers, the muscles and joints regain their former tone, and the lesions in the bone and joint structures heal. Abscesses calcify, and complete "reconstruction" takes place in time. This healing process is aided greatly by functional use of the muscles. Very soon after gradual exposure of the skin, following a routine which exposes the lower extremities first, pain and discomfort cease and healing sets in.

The great disaster is multiple infection. Consequently, abscess formation is severely let alone until the abscess content reaches the subcuticular region. Then, and not until then the abscess may be aspirated.

The great catastrophe of surgical tuberculosis is surgical interference, both in adults and in children. Rest, exposed in the sunlight, is the necessary treatment. The length of time required for cure is not an argument to be used. Surgical interference is dangerous at best and leads to disaster in most instances, except one—renal tuberculosis demands removal of the tuberculous kidney. Thus it is, that for periods of time ranging from two to ten years, patients are treated by heliotherapy at Rollier's clinic. Intermissions in the treatment are dangerous. "Complete cure is finally accomplished." It is judged by the roentgenographic records. Indeed, the matter of resumption of function is decided by the roentgenologist, who purposely has no clinical knowledge of the progress of the individual. When the x-ray plate shows "reconstruction" of a joint, or sufficient "block" about diseased vertebrae, then it is decided that the patient may be up and about. Recumbent patients use their muscles and move the diseased joints as much or as little as they wish. Spinal disease is treated by recumbency, without braces or jackets. Hyperextension of the spine is actively encouraged so that the erector spinae muscles become well developed and strong. During convalescence the apparatus used for protection is of the lightest type possible—celluloid or linen splints only.

Without entering upon a discussion of the

various effects of the sun's rays, their photochemical power, or their bactericidal possibilities, suffice it to say that Rollier believes the greatest good comes from this source. He believes that tuberculosis of the bones and joints is cured by this agency, acting on the skin, and that this form of treatment is that which should be given to all cases of tuberculosis in its so-called surgical manifestations.

Much credit is due Rollier for his admirable contribution to the cure of surgical tuberculosis.

Observations made last summer incline the writer to believe that the diagnosis of tuberculosis is correct in the vast majority of Rollier's cases, that what he claims for the sun's rays is in part true, that the situation of his clinic in the high Alps, with clear bracing and stimulating air, coupled with rest, exposure to air, and good food, have much to do with the admirable results very evident at this clinic. Unfortunately, there is no record of failure or of lack of improvement, and thus I wish especially to stress. There is always the possibility that unfavorable results are due to causes beyond control, meaning by this that a case which has not improved under his treatment owes this to multiple infection, to surgical interference, or to poor co-operation. One feels that Rollier believes that heliotherapy is not to be blamed for an occasional failure. It may be said, that in Rollier we have an enthusiast who realizes from his own extensive experience that surgical tuberculosis is much improved and at times cured by the methods of treatment he uses, and which he calls heliotherapy. His optimism and whole-hearted enthusiasm for heliotherapy are both understandable and pardonable when the immense value of his contribution is justly considered.

In England, the observer is at once struck with the fact that although surgical tuberculosis is there treated at sea level, with comparatively little sunshine, nevertheless the results of heliotherapy are equally good if not better than those seen in Switzerland at Rollier's clinics. This observation will, I am sure, demand substantiation, and the most outstanding evidence is supplied by the work of Sir Henry Gauvain⁶ at Alton. At this hospital one sees browned children, whose bone and joint lesions are quiescent, up and about with well nourished bodies, having been transformed from pale, suffering children with active, progressive, localized tuberculosis into children with lessened deformity and no evidence of active disease. Gauvain and his associates utilize all the sun that can be used, and supplement the lack of sun with various forms of artificial light, i.e. carbon arc, mercury vapor, and Finsen Ray lamps. The disease process is treated locally, and the patient is treated as a whole by the rays from these various lamps. Added to this are rest, proper surgical treatment in the way of protection, and fixation, carried out under the direction of Mr. H. A. T. Fairbank, good food, fresh air, sea water bathing, and exceptionally healthful surroundings.

There is nothing inherently difficult in making the diagnosis of incipient tuberculosis. It ought not to require the services of a specialist to do this. But the fact remains that the medical profession is not diagnosing tuberculosis in its early stages and probably will continue to fail to do so until we change our method of attack. The present situation presents certain fundamental imperfections, among which are the following:

The subject of tuberculosis not only as regards its diagnosis and its treatment but as to its broader aspects, is given extremely scant attention in our medical schools. The medical student is given intensive training in syphilology and other bacteriological and physiological studies but he is taught remarkably little about what is perhaps the most important medical problem at the present time,—tuberculosis. Our schools are turning out men who are intended to be teachers and investigators rather than general practitioners, and yet it is to the general practitioner we must turn if we expect to find tuberculosis in its early stages.

Of equal importance is the fact that the majority of our general hospitals still refuse to admit cases of tuberculosis into their wards. I should like to broadcast all over this country the words of Dr. Henry A. Christian of the Peter Bent Brigham Hospital in Boston who at a recent medical meeting stated in no uncertain terms his belief that tuberculosis in all its forms should be accepted into the general wards of our hospitals or, better still, that a ward be set apart for this purpose so that medical students and internes would have some opportunity now practically denied them to learn at first hand something about tuberculosis. At the Massachusetts General Hospital, a mecca for medical students all over this country, unless a change has been made in the past few weeks, cases of tuberculosis or suspected tuberculosis of the lungs are absolutely refused admission with the result that the nurses, internes and staff of this hospital have practically no opportunity of really studying this subject.

A further handicap to arriving at an early diagnosis, and one which will always exist, lies in the fact that the average general practitioner is an overworked man, continually in a hurry. He has to get in from 20-30 calls a day, often at the expense of eating, sleeping and resting; he has to rush through his office hours in order to make his afternoon visits. It is not to be wondered at, therefore, that he sometimes overlooks the early signs and symptoms of this disease.

Another obstacle in our path in this direction, and a very human one, is that we doctors do not enjoy making ourselves unpopular with our patients and in consequence not infrequently do not tell the entire truth. We are apt to save our own consciences with such statements as

"you have a little spot on your lungs", "your lungs are a trifle weak", or worse still, we deliberately lie to the patient and tell him he has an acute bronchitis or something equally innocuous.

For these reasons, and particularly the first two, I feel very strongly that until our medical schools really teach this subject properly and until our hospitals realize their duty in this regard, we will make more progress by devoting most of our energies to educating the general public. It was recently my privilege to review a small book by Dr. John Potts of Texas entitled, "Getting Well and Staying Well", which interested me greatly, especially the first chapter, "Suspecting Tuberculosis". This might be read with profit not only by the general public but also by every general practitioner.

How are we going to teach the general public to suspect tuberculosis? This is not an easy task. First and foremost I feel that this should be done by the medical profession and yet the very difficulties which I have mentioned above, that handicap the general practitioner in making an early diagnosis to a certain extent, at least, will handicap him in teaching his patients and the general public how to suspect this disease. I feel however that notwithstanding these drawbacks it is a very real and definite duty on the part of every general practitioner to emphasize the fact to his patients that the normal condition of the human body is one of health and that any deviation from this, no matter how slight, should be investigated. If doctors would only explain to their patients, when they see them for coughs, colds and other minor ailments, that the chief reason they are sick is because they have not played the game squarely and because they have broken some of the rules of right living, there would be less sickness and less tuberculosis. The smallest part of the doctor's duty toward his patient is the giving of drugs and writing prescriptions. He should see to it that the patient understands *why* he is sick and what he should do to prevent its happening again. This simply means explaining and emphasizing the rules of health and hygiene and pointing out some early signs of deviation from health.

Next to the general practitioner the most important agency in teaching the general public how to suspect tuberculosis is the tuberculosis association. In his report of a recent survey of Boston Dr. Haven Emerson of New York criticized the Boston Tuberculosis Association (of which I have been the head for some years) on the ground that far too large a proportion of its budget was devoted to running a preventorium for children and not enough to strictly educational purposes. I did not agree with him then nor do I now, because I know that a properly run preventorium can and should be, and in our case is, an educational center of the very high-

result frequently in apparent cure with lessened periods of invalidism

An inconclusive argument may arise as to the value of the time element in the cure of tuberculosis. I am one of those who hold that in children with bone and joint tuberculosis the time element may be largely disregarded. On the contrary, in adults and young adults I believe the time element is of great significance especially when ultimate cure implies the final ankylosis of a joint.

In these statements I widely differ from the beliefs of the heliotherapeutic enthusiast, because I do not believe that extensively diseased joint areas may be reconstructed—a term of Rollier's—by the sun cure. I will gladly believe that in children taken early in the disease joints may be saved to useful function,—this is a consummation much to be desired. Consequently, I believe that operative surgery is not indicated in tuberculosis of the bones and joints until methods of heliotherapy have been employed for long periods of time.

The differences which arise in the discussion of this problem have origin in our fundamental point of view regarding tuberculosis. If one has knowledge of the possible duration of this disease process in the tissues, especially in such tissues as bone and joints, he will be inclined to believe that lack of clinical symptoms and signs of the disease may represent only a period of quiescence, and that ultimate healing of a tuberculous lesion requires long periods of high resistance to the disease. The actual lesion of tuberculosis in the bone and joint structure will remain destructive in character, and the amount of destruction will always remain variable, depending upon the individual resistance. Heliotherapy and such are designed to raise the resistance. Surgery is applicable as an aid to the reparative process which heals the tuberculous lesion.

REFERENCES

- 1 The Virulence of the Tubercle Bacillus. Fastwood, A. S. and T. Griffith. Jour Path. and Bact. vol. xxi. no. xiii. 1916, 190.
- 2 The Significance of Allergy in Tuberculosis. Krause, A. K. Trans. 17th Ann. Meet. Nat. Tuberculosis Assn.
- 3 Zinsser, Hans. Shattuck Lecture. Boston Med. and Surg. Jour. Jun. 15, 1925.
- 4 The Nature of Resistance to Tuberculosis. Krause, A. K. Amer. Rev. Tub. vol. 1, no. 2, 1917.
- 5 La Cure du Soleil. Rollier, 1915.
- 6 Reports of Cripples Hospital and College Alton Hants Eng. land. Gauvain, Sir Henry, 1916.
- 7 S. Nicholas and S. Martin. Orthopaedic Hospital, Purford, England. Bristow, W. Rowley.

8 Heliotherapy in Relation to Spinal Tuberculosis in Children. Ghormley, R. K. Jour. A. M. A. 1927.

DISCUSSION

Dr. ROBERT B. OSGOOD, Boston. Dr. Allison has given you a careful review of the evidence and then draws the careful conclusions that we always expect from him. The importance of this question is very great as far as those who have to deal with tuberculosis of the bones and joints is concerned because there is a growing tendency among surgeons to operate upon these joints and make them stiff. As Dr. Allison said, this is the method of cure by nature and is a method of cure by art also. And yet we are not ready to say that every tuberculous joint as the hip or knee should be made stiff artificially as soon as we can make the diagnosis because heliotherapy may be of enormous advantage. Men like Rollier and Sir Henry Gauvain have followed cases which have come to them in the early stages and watched them after treatment by heliotherapy and artificial light, regain useful joint motion and retain it without any recurrence of the disease for ten to fifteen years. If this is so, and we cannot tell which joints are to recover and which not, we ought not to artificially stiffen them as soon as the diagnosis is made.

I asked Dr. LoGiasso at Perrysburg if he could show me any tuberculous joints which had been proved tuberculous by biopsy and by X-ray evidence that had normal or useful ranges of motion under strenuous use without symptoms or signs and he showed me three. I saw the patients absolutely symptomless with almost complete motion and with X-ray evidence showing healing of what was originally an erosion of the articular surface. If this can be accomplished I would prefer such results and run the risk of a lighting up of the disease than to have a stiff knee or a stiff hip. A stiff knee is a tremendous handicap. Several years of function are worth while. We do not know the percentage of recurrences and if the disease recurs, arthrodesis operations may be performed. If these cases may go on for 15 years or more with movable joints, then I believe we ought to delay our operations in children until the disease has so injured the joint surfaces that the joint can never regain useful function then we ought to ankylose these joints to save time and promote health and restore activity.

ORIGINAL ARTICLES

SUSPECTING TUBERCULOSIS

BY JOHN B. HAWES, 2ND, M.D.

THE title "Suspecting Tuberculosis", rather than "The Early Diagnosis of Tuberculosis", is used as a text for my remarks because I firmly believe that we are only going to get at tuberculosis in its early stages and bring about a fur-

For record and address of author see "This Week's Issue" page 365.

ther diminution in its mortality by teaching the general public the striking warning signs and symptoms of this disease, which, when present, should lead them to suspect that something is wrong and that this something may be consumption.

There is nothing inherently difficult in making the diagnosis of incipient tuberculosis. It ought not to require the services of a specialist to do this. But the fact remains that the medical profession is not diagnosing tuberculosis in its early stages and probably will continue to fail to do so until we change our method of attack. The present situation presents certain fundamental imperfections, among which are the following:

The subject of tuberculosis, not only as regards its diagnosis and its treatment but as to its broader aspects, is given extremely scant attention in our medical schools. The medical student is given intensive training in syphilology and other bacteriological and physiological studies but he is taught remarkably little about what is perhaps the most important medical problem at the present time,—tuberculosis. Our schools are turning out men who are intended to be teachers and investigators rather than general practitioners, and yet it is to the general practitioner we must turn if we expect to find tuberculosis in its early stages.

Of equal importance is the fact that the majority of our general hospitals still refuse to admit cases of tuberculosis into their wards. I should like to broadcast all over this country the words of Dr. Henry A. Christian of the Peter Bent Brigham Hospital in Boston, who at a recent medical meeting, stated in no uncertain terms his belief that tuberculosis in all its forms should be accepted into the general wards of our hospitals or, better still, that a ward be set apart for this purpose so that medical students and internes would have some opportunity now practically denied them, to learn at first hand something about tuberculosis. At the Massachusetts General Hospital, a mecca for medical students all over this country, unless a change has been made in the past few weeks, cases of tuberculosis or suspected tuberculosis of the lungs are absolutely refused admission with the result that the nurses, internes and staff of this hospital have practically no opportunity of really studying this subject.

A further handicap to arriving at an early diagnosis, and one which will always exist, lies in the fact that the average general practitioner is an overworked man, continually in a hurry. He has to get in from 20-30 calls a day, often at the expense of eating, sleeping and resting, he has to rush through his office hours in order to make his afternoon visits. It is not to be wondered at, therefore, that he sometimes overlooks the early signs and symptoms of this disease.

Another obstacle in our path in this direction and a very human one is that we doctors do not enjoy making ourselves unpopular with our patients and in consequence not infrequently do not tell the entire truth. We are apt to save our own consciences with such statements as

'you have a little spot on your lungs', 'your lungs are a trifle weak' or worse still, we deliberately lie to the patient and tell him he has an acute bronchitis or something equally innocuous.

For these reasons, and particularly the first two I feel very strongly that until our medical schools really teach this subject properly and until our hospitals realize their duty in this regard we will make more progress by devoting most of our energies to educating the general public. It was recently my privilege to review a small book by Dr. John Potts of Texas entitled, "Getting Well and Staying Well", which interested me greatly especially the first chapter, "Suspecting Tuberculosis". This might be read with profit not only by the general public but also by every general practitioner.

How are we going to teach the general public to suspect tuberculosis? This is not an easy task. First and foremost I feel that this should be done by the medical profession and yet the very difficulties which I have mentioned above, that handicap the general practitioner in making an early diagnosis, to a certain extent at least, will handicap him in teaching his patients and the general public how to suspect this disease. I feel, however, that notwithstanding these drawbacks, it is a very real and definite duty on the part of every general practitioner to emphasize the fact to his patients that the normal condition of the human body is one of health and that any deviation from this, no matter how slight, should be investigated. If doctors would only explain to their patients, when they see them for coughs, colds and other minor ailments, that the chief reason they are sick is because they have not played the game squarely and because they have broken some of the rules of right living, there would be less sickness and less tuberculosis. The smallest part of the doctor's duty toward his patient is the giving of drugs and writing prescriptions. He should see to it that the patient understands *why* he is sick and what he should do to prevent its happening again. This simply means explaining and emphasizing the rules of health and hygiene and pointing out some early signs of deviation from health.

Next to the general practitioner the most important agency in teaching the general public how to suspect tuberculosis is the tuberculosis association. In his report of a recent survey of Boston Dr. Haven Emerson of New York criticized the Boston Tuberculosis Association (of which I have been the head for some years) on the ground that far too large a proportion of its budget was devoted to running a preventorium for children and not enough to strictly educational purposes. I did not agree with him then nor do I now, because I know that a properly run preventorium can and should be, and in our case is, an educational center of the very high-

est value At our own preventorium, for instance, each of our children is followed up after discharge in order that both the child and his parents may carry on in the home the rules of health and hygiene that have been taught at the preventorium In addition to this, the Health Crusade in our Boston schools with something over 18,000 children enrolled, carries on this work, while informal talks to young men and women of all kinds in factories, stores and elsewhere on the early symptoms of tuberculosis and how to keep well are helping those above school age

The third agency in teaching tuberculosis should be state and local boards of health and education Here is a splendid opportunity, but far too often a neglected one, to spread the gospel of right living In Massachusetts there is a statute that I personally drew up, and that I am sure is now forgotten, that tuberculosis and its prevention shall be taught in those grades of our public schools in which the subjects of physiology and hygiene are taught I emphasize the words "*and its prevention*"

Coming down more to details, what are the particular signs and symptoms we should emphasize as being most important in the early recognition of tuberculosis? The great majority of persons, I feel, would answer without the slightest hesitation that they are such striking symptoms related to the lungs as a cough, raising of sputum or of blood, pain in the chest, etc. I do not agree with this I do not mean that these symptoms are unimportant, but I do feel that certain others have not been sufficiently stressed While we certainly should impress the fact that blood spitting means tuberculosis until the contrary is proved, that a pleurisy, wet or dry, should be considered as highly suspicious of tuberculosis, and that any cough lasting over six weeks requires careful investigation, it is the constitutional signs and symptoms which should be given the greater emphasis The most important of these—and likewise the most intangible—is *chronic fatigue, undue fatigue or ease of tunc* If we could only learn the importance and danger of chronic fatigue, if we would only learn to be honest with ourselves and recognize when we are going on our nerve and would not fool ourselves as we are so apt to do tuberculosis would be recognized far earlier than it is at the present time

Patients are constantly coming to see me for a cough that has lasted a few weeks or because they have recently spit up some blood It is one of these two symptoms which sends them most often to a doctor On going over the situation with them, however, they often admit that they had been utterly exhausted at the end of the day's work, that everything had been an effort to them, and that they had been losing weight and strength for months prior to the advent of

the cough or the spitting up of blood If they had been taught to consult a physician for these earlier symptoms, many lives would have been saved

I would summarize my feelings in regard to the best means of securing the more frequent early diagnosing of tuberculosis as follows

The facts concerning early diagnosis are already fairly well known to the medical profession

The difficulties lie in the present inadequate attention given to this subject at our medical schools and the refusal of general hospitals to accept cases of tuberculosis or suspected tuberculosis for study and diagnosis

The general practitioner is and always will be a busy, overworked man

To get at patients with tuberculosis in the early stages more frequently than we are now doing, we must teach everyone how to suspect tuberculosis in its incipency and must urge them to come to the doctor with this point in mind

In teaching the laity the early signs of tuberculosis we must emphasize chronic and undue fatigue, loss of weight, strength and energy more strongly than we have been doing in the past

DIPLOMATS OF 1927 DISTRIBUTED BY SCHOOLS

During the calendar year of 1927 there were 272 physicians who completed their credits in the National Board's examinations by passing Part III All have been awarded the Certificate of the National Board to be delivered upon the payment of final instalment of the fee The Medical Schools from which these diplomats graduated are as follows

Harvard	53
Johns Hopkins	25
Pennsylvania	23
Cornell	21
Washington	20
Rush	18
Columbia	10
Medical Evangelists	10
Virginia (Univ.)	10
Jefferson	9
Woman's	7
Tufts	5
Albany	4
Michigan	4
Vanderbilt	4
Vermont	4

From Boston Louisville Nebraska Northwestern, Tulane Western Reserve Yale 3 each from Baylor, Buffalo California Creighton Syracuse Toronto 2 each, from Colorado Conjoint Board of England George Washington Illinois Indiana Kansas McGill Maryland Minnesota New York Pittsburgh Stanford 1 each—National Board Bulletin

NEW HAMPSHIRE MEDICAL SOCIETY

THE SELECTION OF CASES FOR MEDICAL OR SURGICAL TREATMENT IN GASTRIC AND DUODENAL ULCER*

BY HARLOW BROOKS M D †

WE do not know the cause of peptic ulcer. Were I to but briefly consider the various theories proposed as concerned in the production of gastric ulcer, I would necessarily take up more time than your good sense and patience would permit on such an occasion as this.

At the very outset then, we must confess that in discussing the treatment of this frequent and exceedingly important condition either from the medical or the surgical standpoint we are really debating the treatment of the lesion produced by the disease or the patient with the disease and not the disease itself. Until the cause of peptic ulcer has been definitely demonstrated we should not then speak confidently of the cure of the condition but rather of the mitigation and relief of certain of its signs and symptoms.

Peptic ulcer recurs with distressing frequency after either medical or surgical efforts at cure. Sometimes it returns in the same area evidently as an extension or recrudescence of the original lesion or it may appear in some other locality. This is equally true after either medical or surgical treatment. We are neither of us curing the disease. There can be no question, however, but that we are giving increasing relief of the lesions by both medical and surgical measures. The life of the average patient suffering from this disease can now be almost always made secure by one method or the other and in most cases we are now able by either method or by both combined to give such relief from the distressing and disqualifying symptoms as to make life not only bearable but also in most instances comfortable and efficient.

This is a great deal to have accomplished. We have to thank not only the surgeon and the internist for this great advance but also the physiologist, the chemist, and particularly the dietitian but perhaps most of all the roentgenologist. The careful exact and a definite anatomical location of an ulcer is essential in every instance for logical and correct treatment. This is only possible through the boon conferred on medicine by the X-ray.

The subject assigned me by your committee on program includes both duodenal and gastric ulcer. Were I to discuss the subject from any other standpoint than that of treatment perhaps I might be inclined to discuss and to argue that the two conditions differ in certain essential particulars but the treatment of the two conditions

whether medical or surgical is essentially the same, as is probably also, the basic pathology. Certain essential peculiarities exist, however. For example it has impressed me that acute, unheralded perforation and haemorrhage are more frequent in the duodenal rather than in the gastric location. The management is however, as I have already stated essentially the same.

Perhaps before I go further into the subject it may be well for me to state my qualifications to "qualify as an expert" before I attempt to pose as a judge in this court. My work is primarily that of a diagnostician. My association both in the various gastroenterological societies to which I belong and in the hospitals in which I serve has for a considerable time been equally with surgeons, internists and with roentgenologists. I believe I have therefore, an even-minded perspective of the subject and while I have never practiced surgery I think that I am a sufficiently broad-minded therapist to realize that there are many cases which on the one hand demand prompt and definite surgery and on the other, many instances in which medical measures offer the most prompt, sensible and least dilatory prospect for recovery.

I shall, then consider the subject largely from the standpoint of the selection of cases those most suitable for medical treatment and those most satisfactorily managed through surgery. In my conclusions on this phase of the problem I wish to confess my instruction and my dependence on the council of such roentgenologists as Gottlieb Cole, Stewart and Le Wald with whom I have long been associated in both practice and in the various medical societies to which we mutually belong.

After all it is not the lesion alone which we are called upon to treat, nor the disease itself, but it is the patient who has the ulcer that primarily concerns us, and it is from the standpoint of this patient that I wish to present my arguments and conclusions.

The social position of the patient is a matter of no trivial import. Is he able to carry out in a satisfactory manner the long and frequently entirely disqualifying medical method of treatment so essential especially in large chronic ulcers? Does his social position, his occupation and the needs of those dependent on him permit him to devote himself satisfactorily to a tedious and long-continued course of medical treatment which we know to be only successful in a good many cases particularly in painful and in large chronic ulcers? Every experienced internist

*Read at the Annual Meeting of the New Hampshire Medical Society, at New Castle June 1927.

†For record and address of author see This Week's Issue page 365.

est value At our own preventorium, for instance, each of our children is followed up after discharge in order that both the child and his parents may carry on in the home the rules of health and hygiene that have been taught at the preventorium In addition to this, the Health Crusade in our Boston schools with something over 18,000 children enrolled, carries on this work, while informal talks to young men and women of all kinds in factories, stores and elsewhere on the early symptoms of tuberculosis and how to keep well are helping those above school age

The third agency in teaching tuberculosis should be state and local boards of health and education Here is a splendid opportunity, but far too often a neglected one, to spread the gospel of right living In Massachusetts there is a statute that I personally drew up, and that I am sure is now forgotten, that tuberculosis and its prevention shall be taught in those grades of our public schools in which the subjects of physiology and hygiene are taught I emphasize the words "*and its prevention*"

Coming down more to details, what are the particular signs and symptoms we should emphasize as being most important in the early recognition of tuberculosis? The great majority of persons, I feel, would answer without the slightest hesitation that they are such striking symptoms related to the lungs as a cough, raising of sputum or of blood, pain in the chest, etc I do not agree with this I do not mean that these symptoms are unimportant, but I do feel that certain others have not been sufficiently stressed While we certainly should impress the fact that blood spitting means tuberculosis until the contrary is proved, that a pleurisy, wet or dry, should be considered as highly suspicious of tuberculosis, and that any cough lasting over six weeks requires careful investigation, it is the constitutional signs and symptoms which should be given the greater emphasis The most important of these—and likewise the most intangible—is chronic fatigue, undue fatigue or case of the If we could only learn the importance and danger of chronic fatigue, if we would only learn to be honest with ourselves and recognize when we are going on our nerve and would not fool ourselves as we are so apt to do tuberculosis would be recognized far earlier than it is at the present time

Patients are constantly coming to see me for a cough that has lasted a few weeks or because they have recently spit up some blood. It is one of these two symptoms which sends them most often to a doctor On going over the situation with them, however, they often admit that they had been utterly exhausted at the end of the day's work, that everything had been an effort to them, and that they had been losing weight and strength for months prior to the advent of

the cough or the spitting up of blood If they had been taught to consult a physician for these earlier symptoms, many lives would have been saved.

I would summarize my feelings in regard to the best means of securing the more frequent early diagnosing of tuberculosis as follows

The facts concerning early diagnosis are already fairly well known to the medical profession

The difficulties lie in the present inadequate attention given to this subject at our medical schools and the refusal of general hospitals to accept cases of tuberculosis or suspected tuberculosis for study and diagnosis

The general practitioner is and always will be a busy, overworked man.

To get at patients with tuberculosis in the early stages more frequently than we are now doing, we must teach everyone how to suspect tuberculosis in its incipency and must urge them to come to the doctor with this point in mind

In teaching the laity the early signs of tuberculosis we must emphasize chronic and undue fatigue, loss of weight, strength and energy more strongly than we have been doing in the past

DIPLOMATS OF 1927 DISTRIBUTED BY SCHOOLS

During the calendar year of 1927 there were 272 physicians who completed their credits in the National Board's examinations by passing Part III All have been awarded the Certificate of the National Board to be delivered upon the payment of final instalment of the fee The Medical Schools from which these diplomats graduated are as follows

Harvard	53
Johns Hopkins	25
Pennsylvania	23
Cornell	21
Washington	20
Rush	18
Columbia	10
Medical Evangelists	10
Virginia (Univ)	10
Jefferson	9
Woman's	7
Tufts	5
Albany	4
Michigan	4
Vanderbilt	4
Vermont	4

From Boston Louisville Nebraska Northwestern
Tulane Western Reserve, Yale 3 each from Baylor
Buffalo California Creighton Syracuse Toronto 2
each from Colorado Conjoint Board of England,
George Washington Illinois Indiana Kansas Mc
Gill Maryland Minnesota New York Pittsburgh
Stanford 1 each—National Board Bulletin

NEW HAMPSHIRE MEDICAL SOCIETY

THE SELECTION OF CASES FOR MEDICAL OR SURGICAL TREATMENT IN GASTRIC AND DUODENAL ULCER*

BY HARLOW BROOKS, M.D.†

WE do not know the cause of peptic ulcer. Were I to but briefly consider the various theories proposed as concerned in the production of gastric ulcer, I would necessarily take up more time than your good sense and patience would permit on such an occasion as this.

At the very outset then we must confess that in discussing the treatment of this frequent and exceedingly important condition either from the medical or the surgical standpoint we are really debating the treatment of the lesion produced by the disease or the patient with the disease and not the disease itself. Until the cause of peptic ulcer has been definitely demonstrated we should not then speak confidently of the cure of the condition but rather of the mitigation and relief of certain of its signs and symptoms.

Peptic ulcer recurs with distressing frequency after either medical or surgical efforts at cure. Sometimes it returns in the same area evidently as an extension or recrudescence of the original lesion or it may appear in some other locality. This is equally true after either medical or surgical treatment. We are neither of us curing the disease. There can be no question however, but that we are giving increasing relief of the lesions by both medical and surgical measures. The life of the average patient suffering from this disease can now be almost always made secure by one method or the other and in most cases we are now able by either method or by both combined to give such relief from the distressing and disqualifying symptoms as to make life not only bearable but also in most instances comfortable and efficient.

This is a great deal to have accomplished. We have to thank not only the surgeon and the internist for this great advance, but also the physiologist, the chemist, and particularly the dietitian but perhaps most of all the roentgenologist. The careful, exact and a definite anatomical location of an ulcer is essential in every instance for logical and correct treatment. This is only possible through the boon conferred on medicine by the X-ray.

The subject assigned me by your committee on program, includes both duodenal and gastric ulcer. Were I to discuss the subject from any other standpoint than that of treatment perhaps I might be inclined to discuss and to argue that the two conditions differ in certain essential particulars but the treatment of the two conditions

whether medical or surgical is essentially the same, as is probably also, the basic pathology. Certain essential peculiarities exist, however. For example it has impressed me that acute, unheralded perforation and haemorrhage are more frequent in the duodenal rather than in the gastric location. The management is, however, as I have already stated essentially the same.

Perhaps before I go further into the subject it may be well for me to state my qualifications, to "qualify as an expert" before I attempt to pose as a judge in this court. My work is primarily that of a diagnostician. My association both in the various gastroenterological societies to which I belong and in the hospitals in which I serve has for a considerable time been equally with surgeons, internists and with roentgenologists. I believe I have, therefore, an even-minded perspective of the subject, and while I have never practiced surgery I think that I am a sufficiently broad-minded therapist to realize that there are many cases which on the one hand demand prompt and definite surgery and on the other, many instances in which medical measures offer the most prompt sensible and least dilatory prospect for recovery.

I shall, then consider the subject largely from the standpoint of the selection of cases those most suitable for medical treatment and those most satisfactorily managed through surgery. In my conclusions on this phase of the problem I wish to confess my instruction and my dependence on the council of such roentgenologists as Gottlieb, Cole, Stewart and Le Wald, with whom I have long been associated in both practice and in the various medical societies to which we mutually belong.

After all it is not the lesion alone which we are called upon to treat nor the disease itself, but it is the patient who has the ulcer that primarily concerns us and it is from the standpoint of this patient that I wish to present my arguments and conclusions.

The social position of the patient is a matter of no trivial import. Is he able to carry out in a satisfactory manner the long and frequently entirely disqualifying medical method of treatment so essential, especially in large chronic ulcers? Does his social position, his occupation and the needs of those dependent on him permit him to devote himself satisfactorily to a tedious and long-continued course of medical treatment which we know to be only successful in a good many cases particularly in painful and in large chronic ulcers? Every experienced internist

Read at the Annual Meeting of the New Hampshire Medical Society at New Castle June 1927.

†For record and address of author see "This Week's Issue" page 365.

knows that many such ulcers do heal and with ultimate complete relief of symptoms in many such instances under medical treatment, but the method is long and a favorable result cannot be always promised, we cannot assure any sufferer that he may not in the end require surgery. This is a question of the greatest possible importance in very many cases. To my mind it can be satisfactorily answered by stating the question fairly to the patient, and permitting him to share in the risk of the decision.

In every such instance as this, surgical treatment must be also followed by a long period of medical care. I think that there are very few surgeons who will dissent with me in this statement but this medical care does not usually prevent an ordinarily comfortable and efficient life. The medical treatment alone is however almost certain to require more time, and more complete disqualification measured in so far as a man's occupation is concerned.

There are also certain cases which are poor surgical risks, in which the immediate danger to life is greater with surgery than with the medical management. Such patients should be accordingly advised, or at least their relatives should fully understand. Any other basis is unfair to the surgeon and unfair to the patient.

The occupation of many persons is such that medical treatment can be continued in a fairly satisfactory manner without long detention from business and often without serious loss in efficiency. In such instances medical treatment should, all things being otherwise equal, be first considered.

Some patients are necessarily far from the possibility of efficient emergency surgery for long periods of time. This must be also considered and evaluated. Some persons suffer more acutely and severely than others who have apparently the same sort of lesion. Relief in these can be more promptly afforded as a rule by surgery than by medical measures. The occupation of some patients is such that the annoyance or actual suffering incident to treatment completely disqualifies the person from carrying on his obligatory responsibilities. This period may be sometimes much shortened by surgery followed by medical treatment. In almost all cases when expert surgery is not available, medical treatment should be chosen.

Even in the hands of the most expert surgeon, with the most skilled possible anaesthetist, and the best possible hospital staff and equipment, accidents do happen. Mesenteric thrombosis, unexplainable infection, death from anaesthesia even the leaving of instruments and pads in the abdomen have all happened within my observation. Surgery can never be made less fallible than man. All this should, and must be considered. Where, however, such possibilities are outweighed by more probable unnecessary suffering, loss of time and economic reasons, undue

weight should not be given to such now rather improbable accidents.

It must be always remembered that in the treatment of the disease, in contradistinction to treatment of the lesion that care and a course of medical treatment or observation is imperative after every surgical operation for peptic ulcer. Many cases are followed by the formation of other ulcers, marginal or otherwise, more frequently than most surgeons realize, for once operated, as the patient is almost certain to feel, without result, should even a new ulcer appear the patient rarely returns to his original surgeon or to any other unless almost forced to do so. The waiting rooms of most gastroenterologists contain not infrequent patients who refuse to return to surgery even when strongly urged to do so, once an operation has failed to give them the relief which they think themselves entitled to expect. We cannot be too frequent in our statement to the patient that though the lesion is relieved, the disease probably still remains after even the most skilled and effectual surgery.

Please do not misunderstand me in stressing the incompleteness of surgical results. Absolutely the same condition follows even the most punctilious of medical care and treatment, and the internist must, like the surgeon, remind his patient that in most cases the disease still remains though the obvious lesion may have completely healed, and symptoms entirely disappeared, for the time.

In every instance accurate diagnosis should precede treatment of any kind. Ulcers may be not infrequently multiple. They may be situated at widely separated portions of the organ. One may heal quickly and well under medical care, while the other does not. The absolute recognition of widely separated ulcers at operation, even at post mortem, is by no means an easy matter. Try it if you are in doubt. Neither touch nor even sight is infallible and in every instance an attempt should be made to show the entire gastric contour by the X-ray before conclusive treatment is launched. Ulcers of the posterior wall and of the anterior wall are often very difficult to demonstrate. Not at all infrequently ulcerative processes of the upper border near the cardia are not noted by the ordinary roentgenological examination. It may be necessary to place the patient in the Trendelenburg position or some similar posture for full demonstration of this portion of the stomach.

Many of us, since the advent of the X-ray have too much neglected other diagnostic measures. In many if not most instances it is inadvisable to operate when the gastric acidity still remains high. This should be always considered and corrected when practical before resort to surgery. In some instances at least, correction of this condition will so relieve the patient that he may then refuse operation and in some cases to my knowledge such rapid healing has followed this correction by diet or otherwise that

the case has quickly been eliminated from those probably requiring surgery

Neither the X-ray, chemistry, nor clinical findings nor any other one measure of diagnosis may be sufficient in certain given cases. I have known two instances of syphilis of the stomach to be operated upon under the diagnosis of ulcer. I have known several instances of girdle pains or gastric crisis in tabes dorsalis to be operated upon by excellent surgeons. Conversely I have known instances of cerebro-spinal syphilis where there was also peptic ulcer to be denied operation because of the diagnosis of a tabes. One of these cases proved at autopsy to have been a gastric carcinoma, probably operable during its early but diagnostically possible stages.

I believe that haemorrhage is frequently an important indication for operation, and yet it is not always deemed necessary to determine whether or not haemorrhage is taking place in peptic ulcer. It seems rather improbable in this day that cases requiring a preliminary transfusion should be indiscreetly operated, perhaps under the possible diagnosis of a carcinoma yet this does occur. Of course a proper diagnosis will prevent such embarrassments in most cases.

All too frequently cases are submitted to either surgery or medical treatment of a protracted character when the symptoms are produced by some other lesion. This may be through a defect in the roentgenographic outline. Gall bladder disease, chronic appendicitis, pancreatitis and many other lesions, some of them thoracic as in angina pectoris may so closely simulate the clinical picture of peptic ulcer that either medical or surgical treatment may follow when a little careful diagnostic supervision would have saved the doctor or surgeon much embarrassment and perhaps the patient his life or ultimate health. I am very sure that many of us often institute treatment for peptic ulcer either surgical or medical, on incomplete premises. I have acknowledged the great assistance which we have in roentgenology. Do not overvalue it. Negative findings, some of my skilled friends to the contrary, are not necessarily convincing, and, even in the hands of the expert, positive findings are not always correctly based or differentiated from other conditions, notably from spastic states. The clinician must never be swept off his judicial feet by the apparently convincing findings of the X-ray alone.

It is my opinion that every instance of peptic ulcer in which the probability of cancer or other neoplasm seems high should be submitted to operation if prompt, very prompt, healing signs do not manifest themselves under medical means. Again do not content yourself with haphazard or incomplete diagnosis. Syphilis is too frequently forgotten, spastic contractures have all too frequently misled us, cachexia, from some other condition or from a loss of blood as from esophageal varices in liver disease and the like

are very misleading in this relation. Again I wish to repeat accurate diagnosis must precede treatment of any form and more than infrequently exact diagnosis will in itself indicate the form of treatment best adapted to the particular case under consideration.

Very few surgeons and no experienced internist can deny that prompt and rapid healing follows in very many instances even the chronic and indurated ulcerations when appropriate medical treatment is inaugurated. In extensive ulcerations situated otherwise than at the pylorus, where a resulting cicatrix is likely to be followed by serious obstruction, when such a tendency is manifest under medical care alone it would appear to be obvious that social conditions permitting, medical treatment should be continued. I have seen complete symptomatic relief permanently established where very extensive cicatrization had taken place. It is my opinion however that when extensive ulcerations are situated at or near the pylorus even though rapid healing becomes manifest under rest and medical treatment that the case should nevertheless be submitted to surgery, followed by prolonged observation and by medical treatment. I realize that I differ in this opinion both from many of my medical confreres and from some surgeons also, from the latter as to the need for prolonged medical observation only however.

When chronic haemorrhage is present, and is not controlled promptly by medical measures, my judgment is usually that surgery, preceded if necessary by transfusion should be resorted to. In this instance I am inclined to this practice in part because I have found that such instances are frequently cancerous, though where excision of the ulcer is probably possible surgery is certainly justifiable on general principles. When the location is on the upper border of the cardia, near the esophageal entrance where excision seems too difficult or because of other technical reasons, I advise against operation and prefer to continue medical treatment. Rest of the stomach can be as completely furnished by medical means for long periods of time as by surgery when excision of the ulcer is not probably possible.

Pyloric obstruction even when recognized as probably due to spasm in large part when it fails to respond with reasonable promptness to rest and antacid measures particularly if associated with severe pain is in my opinion an indication for surgery. When medical measures suffice to relieve pain and when it is possible for the patient to submit to the necessary prolonged medical treatment, this last is, in my opinion, preferable.

I have stated very frankly that where a just suspicion of neoplastic ulcer exists after a comprehensive and accurate diagnosis, that in my opinion surgery is indicated. I do not believe however that we are justified in any way in urging surgery even in chronic innocent ulcers on the basis that they are likely to become trans-

formed into cancer. My whole experience as a pathologist, and it is not inconsiderable, cries out against any such theory. I have seen the specimens shown by my greatly respected friend, Dr. Wilson of Rochester, and I am not persuaded in any degree. I do not believe that cancer of the stomach is any more frequent in patients with ulcer of the stomach than in any other similar group. I am quite certain that I voice in this regard the opinion of most experienced gastroenterologists and most pathologists who have carefully considered this subject.

Practically all roentgenologists experienced in the study of the gastro-intestinal tract agree that ulcers of the stomach are much more frequent than the clinical diagnosis of most internists would suggest. Most of these ulcers are minute and do not extend below the mucosa or at most into the submucosa. Given a proper diet, rest and the alkalies, most of these ulcers heal with surprising rapidity. Very many of them exist with few or no symptoms. Some of them give rise nevertheless to considerable haemorrhage as in the so-called Dillafoix ulcer. Most of these lesions heal without any medical care and even in spite of hyperacidity, full and often indiscreet diet, and in greater part they are not diagnosed by the medical man, even if the patient consults him, unless X-ray studies are made.

Few surgeons and no medical men would advise operation in such instances. When we know the cause of peptic ulcer we may be able to advise more intelligently the cure of such cases for they do tend to recur but the treatment of the lesion by rest, bland and scanty diet, or even by a period of starvation or of exclusive rectal alimentation and the correction of hyperacidity succeeds in nearly all instances in effecting cure of symptoms and of the lesion. There is no question, however, but that many of these lesions in untreated cases pass on to perforation, to chronic indurated ulcer, and even to phagedenic ulceration. I do not believe that they become cancerous.

Still another stage of advance is shown in the ulcer which burrows through the mucosa of the gastric or duodenal wall into the submucosa. A few of them become undermined, such are unlikely to heal under medical treatment in anything like a prompt way. A high percentage of them heal under properly directed medical treatment, the resulting scar becomes bridged over by newly formed mucous membranes and a true healing of the lesion has taken place. Some of these both in properly and improperly treated cases fail to heal in this favorable manner, the edges become indurated, they may even become phagedenic and spread undermining the mucosa. This occurs in some cases in spite of proper medical treatment but in most instances where suitable medical treatment and the more important medical regime is instituted, healing, with rather prompt relief of the most distressing symptoms takes place.

There are however other cases which fail to heal even under a carefully managed regime. These should be operated as soon as this appears to be obvious. It is now such a very easy matter to determine whether or not healing is taking place. The clinical signs and symptoms in association with the X-ray findings in comparison with previous plates would determine within a few weeks at the latest whether or not healing is proceeding satisfactorily. If not, surgery can then be appealed to, but in my opinion but little is likely to be saved by surgery in the ordinary sized ulcer when we wait a reasonable length of time for evidences of repair, or its evident failure.

We must remember in this relation that it is only in certain selected cases that the surgeon is able to really eradicate the lesion present. In those frequent instances where a gastro-enterostomy is done, surgery but accomplishes the medical result of giving rest to the ulcerated area, precisely the same thing which we may in most cases accomplish by starvation, alkaline treatment and by the use of foods which quickly pass the barrier of the pylorus. The ulcer still presents the possibility of a sudden and severe haemorrhage and for those of you who believe that cancer is likely to develop in this focus, the same danger exists in the case which has had a gastro-enterostomy, as in the case which received only medical treatment. Then, too, as most of you have found from experience, the mechanical result from even the most perfectly done gastro-enterostomy is by no means always satisfactory, from the patient's standpoint. Regurgitation, recurrent and marginal ulcers, and quite as much and sometimes more disturbance follows in the operated case as in that which has not been operated. Remember especially that in this type of ulcer neither surgery nor medical treatment cures the disease, even though it may heal the lesion.

Of course those of you who are convinced that hyperacidity is the cause of gastric ulcer may argue, as do some of our very brilliant surgeons, one in particular, (Beig) that actual cure may be accomplished by the means of a subtotal gastrectomy, that is, by the removal of practically the whole of the acid secreting portion of the stomach. This is of course a very serious operation. I have seen apparently beautiful results from it in several instances and I am far from saying that it should not be practiced, but I do assert that only few surgeons may do so with an encouraging fatality list. I think that the highly-skilled surgeon should do this operation in some cases but it is no operation for the occasional or casual visitor in the abdominal cavity to undertake.

A little observation will show, as I have previously said, when ulcers fail to evince a tendency toward healing. When this is the case I think that surgery should supplant medical treatment in practically all instances unless perhaps it be

in those in which time is of little value and in which suffering is at a minimum

When the ulcer has extended below the mucosa and the submucosa and into the muscular wall of the stomach, or even through to the external fibrosa, in most cases I believe that surgery should be considered early because healing does not take place so readily as in ulcers of the other classes. Perhaps a certain qualification should be made, however, in this respect, where it is impossible to excise the ulcer or where a partial gastrectomy seems inadvisable, I should certainly advise waiting to see if medical healing might not occur, for it is my contention that in many instances, at least of gastro-enterostomy, no more is accomplished than mere imitation of the same object possible of accomplishment in medical cure.

Where external adhesions have formed and symptoms apparently caused by them have resulted, I believe that surgical treatment should receive the first consideration. Most but by no means all, cases of extensive ulceration of the stomach are commonly best treated by surgery where excision is possible or practical. It is, however, quite astonishing, the area which may heal under suitable medical treatment and the negligible degree of symptomatology which follows as a result of the cicatrix in very many cases. This depends however very largely on the location of the ulceration. In the duodenum for example the resulting cicatrix may make a gastro-enterostomy imperative and either ulcers or scars immediately in the pylorus may act in the same way. One finds, however many patients who get on in perfect comfort with extensive scars in either location, the ability which the stomach has to dilate and thus automatically relieve its strictures is almost incredible.

Still another surgical indication must be considered. We have already mentioned it in part. It is in those cases of ulcer in which persistent haemorrhage occurs. Usually in chronic ulcers where oozing from a surface takes place and occult blood in small amount is found almost constantly present in the gastric contents or in the stools, an attempt should be made to check this oozing by medical means. If prompt healing with a decrease in the amount of blood lost does not rather promptly take place, I commonly recommend surgery. If on the other hand severe and repeated haemorrhages of considerable amount take place from a chronic ulcer I recommend early surgery because of the danger from acute losses of blood and the likelihood of the production of a chronic anaemia. In some such instances the ulceration may open into or near some vessel of large size, the condition is thus more or less of a constant menace to life.

Haemorrhage from superficial ulcerations, and they may be very severe at times, even from quite small lesions do not as a rule require surgery, but under suitable treatment promptly

heal quite as efficiently as might be the case with ideal surgical excision of the ulcerated point. I refer here particularly to ulcerations which do not extend below the submucosa.

I am sure that some of the medical men delay too long in resorting to surgery in some of the instances of chronic ulcer in which constant loss of but small amounts of blood takes place some of these cases develop an anaemia of very severe grade, comparable to that of a primary anaemia in its general effects. Where medical means have failed in cases of this character, surgery should be done before the anaemia has established itself as a real body habit in which case it may be impossible to displace it, no matter how completely the blood losses may be checked or met by treatment.

Unfortunately few surgeons realize the efficiency of medical treatment in peptic ulcer. Few surgeons probably also realize the tremendously high percentage of cases which have undergone excellent surgical treatment but have subsequently relapsed or suffer from a return of symptoms without demonstrable lesion or those who suffer from the occasional bad results of operation. Few of these cases return to the surgeon they go to the medical man and it is these cases which have too much persuaded some of us who are intimates of the limitations of surgery. A better understanding between surgeon and medical man would exist if we were able to evaluate our results mutually, if each of us could see the good as well as the bad results of the other. As I have often reiterated in the course of this paper, neither method is one hundred per cent perfect for neither cures the disease.

Then again some of us are given to extravagant statements from the wealth of our ignorance usually. One eminent surgeon ridicules the use of the alkalis in the cure of the condition. It for no other purpose the alkalis are invaluable because of the tremendous comfort which they confer in very many cases. I am also one of those who has found the alkaline treatment very efficient in the cure of the lesions, if intelligently employed in properly selected cases. As much can probably be said numerically of the alkaline method of treatment as can be said of surgery, except as an emergency measure.

Very much depends on the proper selection of cases. Proper selection of cases can only be accurately determined when based on a careful and comprehensive diagnosis and when studied as it were, experimentally without preconceived phobias.

So accustomed has the surgeon become to his methods that he frequently fails to consider the reaction of the average patient toward the proposition of an operation in a debatable condition. It is somewhat amusing to me always, but I have rarely found surgeons keen for operation on their own persons when a possible avenue of medical escape presented. On the other hand

formed into cancer. My whole experience as a pathologist, and it is not inconsiderable, cries out against any such theory. I have seen the specimens shown by my greatly respected friend, Dr. Wilson of Rochester, and I am not persuaded in any degree. I do not believe that cancer of the stomach is any more frequent in patients with ulcer of the stomach than in any other similar group. I am quite certain that I voice in this regard the opinion of most experienced gastroenterologists and most pathologists who have carefully considered this subject.

Practically all roentgenologists experienced in the study of the gastro-intestinal tract agree that ulcers of the stomach are much more frequent than the clinical diagnosis of most internists would suggest. Most of these ulcers are minute and do not extend below the mucosa or at most into the submucosa. Given a proper diet, rest and the alkalies, most of these ulcers heal with surprising rapidity. Very many of them exist with few or no symptoms. Some of them give rise nevertheless to considerable haemorrhage as in the so-called Dillafoix ulcer. Most of these lesions heal without any medical care and even in spite of hyperacidity, full and often indiscreet diet, and in greater part they are not diagnosed by the medical man, even if the patient consults him, unless X-ray studies are made.

Few surgeons and no medical men would advise operation in such instances. When we know the cause of peptic ulcer we may be able to advise more intelligently the cure of such cases for they do tend to recur but the treatment of the lesion by rest, bland and scanty diet, or even by a period of starvation or of exclusive rectal alimentation and the correction of hyperacidity succeeds in nearly all instances in effecting cure of symptoms and of the lesion. There is no question, however, but that many of these lesions in untreated cases pass on to perforation, to chronic indurated ulcer, and even to phagedenic ulceration. I do not believe that they become cancerous.

Still another stage of advance is shown in the ulcer which burrows through the mucosa of the gastric or duodenal wall into the submucosa. A few of them become undermined, such are unlikely to heal under medical treatment in any thing like a prompt way. A high percentage of them heal under properly directed medical treatment, the resulting scar becomes bridged over by newly formed mucous membranes and a true healing of the lesion has taken place. Some of these both in properly and improperly treated cases fail to heal in this favorable manner, the edges become indurated, they may even become phagedenic and spread undermining the mucosa. This occurs in some cases in spite of proper medical treatment but in most instances where suitable medical treatment and the more important medical regime is instituted, healing, with rather prompt relief of the most distressing symptoms takes place.

There are however other cases which fail to heal even under a carefully managed regime. These should be operated as soon as this appears to be obvious. It is now such a very easy matter to determine whether or not healing is taking place. The clinical signs and symptoms in association with the X-ray findings in comparison with previous plates would determine within a few weeks at the latest whether or not healing is proceeding satisfactorily. If not, surgery can then be appealed to, but in my opinion but little is likely to be saved by surgery in the ordinary sized ulcer when we wait a reasonable length of time for evidences of repair, or its evident failure.

We must remember in this relation that it is only in certain selected cases that the surgeon is able to really eradicate the lesion present. In those frequent instances where a gastro-enterostomy is done, surgery but accomplishes the medical result of giving rest to the ulcerated area, precisely the same thing which we may in most cases accomplish by starvation, alkaline treatment and by the use of foods which quickly pass the barrier of the pylorus. The ulcer still presents the possibility of a sudden and severe haemorrhage and for those of you who believe that cancer is likely to develop in this focus, the same danger exists in the case which has had a gastro-enterostomy, as in the case which received only medical treatment. Then, too, as most of you have found from experience, the mechanical result from even the most perfectly done gastro-enterostomy is by no means always satisfactory, from the patient's standpoint. Regurgitation, recurrent and marginal ulcers, and quite as much and sometimes more disturbance follows in the operated case as in that which has not been operated. Remember especially that in this type of ulcer neither surgery nor medical treatment cures the disease, even though it may heal the lesion.

Of course those of you who are convinced that hyperacidity is the cause of gastric ulcer may argue, as do some of our very brilliant surgeons, one in particular, (Beig) that actual cure may be accomplished by the means of a subtotal gastrectomy, that is, by the removal of practically the whole of the acid secreting portion of the stomach. This is of course a very serious operation. I have seen apparently beautiful results from it in several instances and I am far from saying that it should not be practiced but I do assert that only few surgeons may do so with an encouraging fatality list. I think that the highly-skilled surgeon should do this operation in some cases, but it is no operation for the occasional or casual visitor in the abdominal cavity to undertake.

A little observation will show, as I have previously said, when ulcers fail to evince a tendency toward healing. When this is the case I think that surgery should supplant medical treatment in practically all instances unless perhaps it be

me these operations have always presented a strong appeal because no ulcer is left behind unless overlooked. The plastic repair eliminates all contraction pre-existing and should prevent contraction of the new zone.

I was so thoroughly taken with the Horsley operation from both anatomical and physiological viewpoints that I promised myself to do fifty before commenting upon the procedure unless some strong reason produced by failures should call for discontinuance. I finally reported a review of the best part of seventy-five and then began to get my disappointments. Horsley himself had shortly before this called attention to his disappointment, claiming the suturing of the mucosa as a source of error.

I have become so thoroughly at variance with this type of operation to exclude it at the present time from my work except in the operations for perforated ulcer. I was doing an operation allied to Horsley's for years with all the perforated ulcers in my service the difference being the incision of the pyloric ring as advocated by Horsley.

In none of the plastic or excision operations described above have I ever done an added gastroenterostomy. In the accepted repair of some operators, who merely turn in the edges of the perforation and then strengthen the first layer by two or more rows of suture, I have always done an added gastroenterostomy for two reasons, one, that an immediate obstruction might be produced by the infolding suture, the other that a contracting scar might result in a stenosis.

The complicating results of gastroenterostomy such as an occasional hemorrhage, gastric dilatation and vicious circle have not presented the anxiety for improving our operations that the complication of marginal ulcer has. The percentage of non-improved in gastroenterostomy has always been small, that of improved fair while the cured for years has been estimated from eighty to eighty-seven per cent. Nevertheless, more recent observers have variously estimated the occurrence of marginal ulcer from 21 per cent in early literature to as high as 34 per cent recently by Berg and Lewison of Mount Sinai.

The causation of this complication or disagreeable after result has been sought for for years. John F. Erdmann (see *Annals of Surgery*) cites a series of selected patients and states in his arguments, that after careful consideration of such association as non-absorbable suture material, specific disease, hyperacidity, trauma of the tissues by clamps used for checking spillage and hemorrhage, producing an apposition while suturing, the use of tissue forceps of Allis and mouse-tooth varieties, and the possibilities of suture producing infarcts and thrombi that may give rise to tissue destruction that we must finally therefore conclude that some of these patients have an ulcer forming idiosyncrasy. Such patients with marginal ulcer finally led up to care-

ful gastric content analyses until it was decided that hyperacidity was the cause. Therefore, this must be eliminated by surgery if medication and diet did not do the work. Hence the more recent operation of excision of the acid bearing section of the stomach as practised by Pfisterer, etc., and so strongly advocated by Berg and Lewison of New York is logical.

Before considering the operations of choice it is very necessary to digress and enter the field of the other specialties so closely associated with the diagnosis and treatment medically and by dietary means. Close association with the gastroenterologist and roentgenologist is essential to reduce all failures and all operative procedures to a minimum. The roentgenologist is called first to give us his understanding of the size of the ulcer, its penetration as to whether it is below the mucosa, whether it is in the deeper muscular structure or it through the muscular and threatening perforation.

Some few months ago Dr. Cole of New York called a meeting of surgeons, clinicians and gastroenterologists together to consider the subject of ulcer of the stomach excluding all ulcers bearing upon the duodenum, showing a beautiful series of X-ray pictures and some schematic drawings added to a most superb movie of the stomach in action. The differences in a mucosal, dissecting, submucosal, muscular, perforating ulcer were clearly demonstrated. His belief that the muscular, dissecting and perforating were objects of surgical interest after medical treatment failure was conceded by all present. His showings of ulcer under observation by the gastroenterologist were in many instances interesting from the repair standpoint. In addition his evidences of the non-repair and at times progression of ulcers under treatment accentuated his advice to operate in these instances.

To summarize, the close association of the roentgenologist is not only conceded as advisable but it is demanded that X-rays at intervals associated with medical and dietary attentions is of special value both as to observation of repair or non-repair and as a definite signal to interference or not in a surgical sense.

Much has been said and will be said by our medical associates in regard to the repair of ulcers under treatment. Much can be said by all of us on the subject of intermittence of all diagnostic symptoms and signs whether or not under gastroenterological attention. Chief of all to remember is the remission of symptoms during the warm weather and the reappearance of symptoms in the fall and winter aided by nerve strain, smoking, etc. The period of symptoms absence being longer than the symptoms presence by weeks to months and that this absence or remittance condition often fallaciously leads to medical cure diagnoses.

Subsequently shielding themselves and procrastinating return of symptoms with a new ulcer formation diagnosis we as surgeons know by our living autopsies that these patients pre-

the internist must not sacrifice the opportunity which surgery often presents for early and economically desirable relief, nor must he fail to recall the tremendous benefits which good medical treatment offers in a very large percentage of cases

If I have succeeded in causing some of you to consider more carefully the selection of cases

for surgical on the one hand, and for medical treatment on the other, in this subject of peptic ulcer, I have accomplished my full purpose. Neither method is applicable to all cases, neither is a perfect method, and none cures the disease which produces gastric ulcer. Either in properly selected cases gives excellent and gratifying results

THE SURGICAL CONSIDERATION OF ULCER OF THE DUODENUM AND STOMACH*

BY JOHN F. ERDMANN, M.D., F.A.C.S.†

FOR a proper consideration of the surgical treatment of ulcers of the stomach and pylorus a working classification is essential. Both gastric and duodenal ulcers may be divided into perforated, perforating of either calloused or non-calloused types and mucosal or follicular. In the perforated type in either of the viscera under consideration nothing is called for except the earliest operative procedure possible.

In the perforating calloused, infiltrating or penetrating type, operation is to be considered when treatment, dietary and medicinal, has been given fair trial by our medical associates. In the perforating or penetrating, non-calloused type, we have a lesion amenable to treatment in many instances. All gastric ulcers producing hour-glass contraction should be given a definite medical dietary and rest treatment until such agencies are demonstrated by repeated X rays not to be successful.

These same suggestions are to be made in the treatment of all types of duodenal ulcers, the classification of which for convenience is the same as those given for gastric ulcer adding obstructive ulcer in the duodenal for the hour-glass of gastric. It may be of interest to briefly review the types of procedure used in the past forty years for duodenal ulcer.

The operation of anterior gastroenterostomy without entero-enterostomy proved successful in some patients but a vicious circle was established in quite a few before the brilliant suggestion was made and carried out of doing an added jejuno-jejunostomy. The plastic operations, upon the pylorus multiple in number all with the same objective of releasing a contracted pyloric ring or duodenum and theoretically to allow of more rapid emptying of the gastric contents.

The Finney operation which is more advantageous than its predecessors insofar that it permits of resection of the ulcer or ulcers and at the same time widens the diameter of the former stenosis.

During the period of pioneer work, the late Nicholas Senn devised his decalcified bone plates

for better contact of the peritoneal coats by pressure. Abbe his catgut rings for the same purpose and Murphy with his ingenious button for more speedy work and to overcome what at that time was the bug-bear of surgery, the infections and failures by means of suture. At about the same time an ingenious idea was forecast by which defiling the peritoneal cavity was to be obviated to the greatest degree, the rubber suture of McGraw. This suture was a piece of round rubber about eight to ten inches long and 1/16-1/8 of an inch in diameter at one end and tapered to a point at the other end, sufficiently small to enter a special needle. After the gut was apposed to the stomach by a line of sutures, this material was passed through the gut and stomach fully two inches from point of entrance to exit and then tied very tightly to cause cutting through by tension slough of the included bite. The rubber suture was then buried by suturing the stomach to the intestine outside of the first contact row.

Note that the great dread during this period was that of spillage and needle suture infection. All devices for apposition, Murphy button, etc., have been for years abolished by the majority of surgeons, using nothing now but absorbable suture material.

Posterior gastroenterostomy made its entry with a long loop and the added necessity of correcting the frequent vicious circle by an added entero-enterostomy was rapidly succeeded by the no or short loop operation which eliminated the entero-enterostomy. All these devices in the main left the ulcer to heal or not as none but the Finney made any attempt to resect or curette the diseased area.

Among the more radical operations are those that made or make attempts to remove the ulcer and the excision types without or with plastic repair. Among the former of these, i.e. without plastic repair, is the operation of excision of an ulcer non-indurated and one in which little tissue is lost. Suture in any way to repair the defect would mean stenosis.

The second type of operation, that of excision and plastic repair includes the operations of Finney, Horsley, Charles Mayo, Judd, etc. To

*Read before the New Hampshire State Medical Society June 23 1927

†For record and address of author see "This Week's Issue" page 365

me these operations have always presented a strong appeal because no ulcer is left behind unless overlooked. The plastic repair eliminates all contraction pre-existing and should prevent contraction of the new zone

I was so thoroughly taken with the Horsley operation from both anatomical and physiological viewpoints that I promised myself to do fifty before commenting upon the procedure unless some strong reason produced by failures should call for discontinuance. I finally reported a review of the best part of seventy-five and then began to get my disappointments. Horsley himself had shortly before this called attention to his disappointment, claiming the suturing of the mucosa as a source of error.

I have become so thoroughly at variance with this type of operation to exclude it at the present time from my work except in the operations for perforated ulcer. I was doing an operation allied to Horsley's for years with all the perforated ulcers in my service, the difference being the incision of the pyloric ring as advocated by Horsley.

In none of the plastic or excision operations described above have I ever done an added gastroenterostomy. In the accepted repair of some operators, who merely turn in the edges of the perforation and then strengthen the first layer by two or more rows of suture, I have always done an added gastroenterostomy for two reasons, one, that an immediate obstruction might be produced by the infolding suture, the other that a contracting scar might result in a stenosis.

The complicating results of gastroenterostomy such as an occasional hemorrhage, gastric dilatation and vicious circle have not presented the anxiety for improving our operations that the complication of marginal ulcer has. The percentage of non-improved in gastroenterostomy has always been small, that of improved fair, while the cured for years has been estimated from eighty to eighty seven per cent. Nevertheless, more recent observers have variously estimated the occurrence of marginal ulcer from 2½ per cent in early literature to as high as 34 per cent recently by Beig and Lewisohn of Mount Sinai.

The causation of this complication or disagreeable after-result has been sought for for years. John F. Erdmann (see *Annals of Surgery*) cites a series of selected patients and states in his arguments, that after careful consideration of such association as non absorbable suture material, specific disease, hyperacidity, trauma of the tissues by clamps used for checking spillage and hemorrhage, producing an apposition while suturing, the use of tissue forceps of Allis and mouse-tooth varieties, and the possibilities of suture producing infarcts and thrombi that may give rise to tissue destruction that we must finally therefore conclude that some of these patients have an ulcer forming idiosyncrasy. Such patients with marginal ulcer finally led up to care-

ful gastric content analyses until it was decided that hyperacidity was the cause. Therefore, this must be eliminated by surgery if medication and diet did not do the work. Hence the more recent operation of excision of the acid-bearing section of the stomach as practised by Pfisterer, etc., and so strongly advocated by Berg and Lewisohn of New York is logical.

Before considering the operations of choice, it is very necessary to digress and enter the field of the other specialties so closely associated with the diagnosis and treatment medically and by dietary means. Close association with the gastroenterologist and roentgenologist is essential to reduce all failures and all operative procedures to a minimum. The roentgenologist is called first to give us his understanding of the size of the ulcer, its penetration as to whether it is below the mucosa, whether it is in the deeper muscular structure or if through the muscular and threatening perforation.

Some few months ago Dr. Cole of New York called a meeting of surgeons, clinicians and gastroenterologists together to consider the subject of ulcer of the stomach excluding all ulcers bearing upon the duodenum, showing a beautiful series of X-ray pictures and some schematic drawings added to a most superb movie of the stomach in action. The differences in a mucosal, dissecting, submucosal, muscular, perforating ulcer were clearly demonstrated. His belief that the muscular dissecting and perforating were objects of surgical interest after medical treatment failure was conceded by all present. His showings of ulcer under observation by the gastroenterologist were in many instances interesting from the repair standpoint. In addition his evidences of the non-repair and at times progression of ulcers under treatment accentuated his advice to operate in these instances.

To summarize, the close association of the roentgenologist is not only conceded as advisable but it is demanded that X-rays at intervals associated with medical and dietary attentions is of special value both as to observation of repair or non-repair and as a definite signal to interference or not in a surgical sense.

Much has been said and will be said by our medical associates in regard to the repair of ulcers under treatment. Much can be said by all of us on the subject of intermittence of all diagnostic symptoms and signs, whether or not under gastroenterological attention. Chief of all to remember is the remission of symptoms during the warm weather and the reappearance of symptoms in the fall and winter aided by nerve strain, smoking, etc. The period of symptoms absence being longer than the symptoms presence by weeks to months and that this absence or remittance condition often fallaciously leads to medical cure diagnoses.

Subsequently shielding themselves and procrastinating return of symptoms with a new ulcer formation diagnosis, we as surgeons know by our living autopsies that these patients pre-

the internist must not sacrifice the opportunity which surgery often presents for early and economically desirable relief, nor must he fail to recall the tremendous benefits which good medical treatment offers in a very large percentage of cases

If I have succeeded in causing some of you to consider more carefully the selection of cases

for surgical on the one hand, and for medical treatment on the other, in this subject of peptic ulcer, I have accomplished my full purpose. Neither method is applicable to all cases, neither is a perfect method, and none cures the disease which produces gastric ulcer. Either in properly selected cases gives excellent and gratifying results

THE SURGICAL CONSIDERATION OF ULCER OF THE DUODENUM AND STOMACH*

BY JOHN F. ERDMANN, M.D., F.A.C.S.†

FOR a proper consideration of the surgical treatment of ulcers of the stomach and pylorus a working classification is essential. Both gastric and duodenal ulcers may be divided into perforated, perforating or either calloused or non-calloused types and mucosal or follicular. In the perforated type in either of the viscera under consideration nothing is called for except the earliest operative procedure possible.

In the perforating calloused, infiltrating or penetrating type, operation is to be considered when treatment, dietary and medicinal, has been given fair trial by our medical associates. In the perforating or penetrating, non-calloused type, we have a lesion amenable to treatment in many instances. All gastric ulcers producing hour-glass contraction should be given a definite medical dietary and rest treatment until such agencies are demonstrated by repeated X-rays not to be successful.

These same suggestions are to be made in the treatment of all types of duodenal ulcers, the classification of which for convenience is the same as those given for gastric ulcer adding obstructive ulcer in the duodenal for the hour-glass of gastric. It may be of interest to briefly review the types of procedure used in the past forty years for duodenal ulcer.

The operation of anterior gastroenterostomy without entero-enterostomy proved successful in some patients but a vicious circle was established in quite a few before the brilliant suggestion was made and carried out of doing an added jejuno-jejunostomy. The plastic operations, upon the pylorus multiple in number all with the same objective of releasing a contracted pyloric ring or duodenum and theoretically to allow of more rapid emptying of the gastric contents.

The Finney operation which is more advantageous than its predecessors insofar that it permits of resection of the ulcer or ulcers and at the same time widens the diameter of the former stenosis.

During the period of pioneer work, the late Nicholas Senn devised his decalcified bone plates

for better contact of the peritoneal coats by pressure. Abbe his catgut rings for the same purpose and Murphy with his ingenious button for more speedy work and to overcome what at that time was the bug-bear of surgery, the infections and failures by means of suture. At about the same time an ingenious idea was fore cast by which defiling the peritoneal cavity was to be obviated to the greatest degree, the rubber suture of McGraw. This suture was a piece of round rubber about eight to ten inches long and 1/16-1/8 of an inch in diameter at one end and tapered to a point at the other end, sufficiently small to enter a special needle. After the gut was apposed to the stomach by a line of sutures, this material was passed through the gut and stomach fully two inches from point of entrance to exit and then tied very tightly to cause cutting through by tension slough of the included bite. The rubber suture was then buried by suturing the stomach to the intestine outside of the first contact row.

Note that the great dread during this period was that of spillage and needle suture infection. All devices for apposition, Murphy button, etc., have been for years abolished by the majority of surgeons, using nothing now but absorbable suture material.

Posterior gastroenterostomy made its entry with a long loop and the added necessity of correcting the frequent vicious circle by an added entero-enterostomy was rapidly succeeded by the no or short loop operation which eliminated the entero-enterostomy. All these devices in the main left the ulcer to heal or not as none but the Finney made any attempt to resect or curette the diseased area.

Among the more radical operations are those that made or make attempts to remove the ulcer and the excision types without or with plastic repair. Among the former of these, i.e. without plastic repair, is the operation of excision of an ulcer non-indurated and one in which little tissue is lost. Suture in any way to repair the defect without much stenosis.

The second type of operation, that of excision and plastic repair includes the operations of Finney, Horsley, Charles Mayo, Judd, etc. To

*Read before the New Hampshire State Medical Society June 23 1912

†For record and address of author see This Week's Issue page 365

me these operations have always presented a strong appeal because no ulcer is left behind unless overlooked. The plastic repair eliminates all contraction pre-existing and should prevent contraction of the new zone.

I was so thoroughly taken with the Horsley operation from both anatomical and physiological viewpoints that I promised myself to do fifty before commenting upon the procedure unless some strong reason produced by failures should call for discontinuance. I finally reported a review of the best part of seventy-five and then began to get my disappointments. Horsley himself had shortly before this called attention to his disappointment, claiming the suturing of the mucosa as a source of error.

I have become so thoroughly at variance with this type of operation to exclude it at the present time from my work except in the operations for perforated ulcer. I was doing an operation allied to Horsley's for years with all the perforated ulcers in my service the difference being the incision of the pyloric ring as advocated by Horsley.

In none of the plastic or excision operations described above have I ever done an added gastroenterostomy. In the accepted repair of some operators, who merely turn in the edges of the perforation and then strengthen the first layer by two or more rows of suture, I have always done an added gastroenterostomy for two reasons, one that an immediate obstruction might be produced by the infolding suture, the other that a contracting scar might result in a stenosis.

The complicating results of gastroenterostomy such as an occasional hemorrhage, gastric distention and vicious circle have not presented the anxiety for improving our operations that the complication of marginal ulcer has. The percentage of non-improved in gastroenterostomy has always been small, that of improved fair while the cured for years has been estimated from eighty to eighty-seven per cent. Nevertheless, more recent observers have variously estimated the occurrence of marginal ulcer from 21.2 per cent in early literature to as high as 34 per cent recently by Berg and Lewishohn of Mount Sinai.

The causation of this complication or disagreeable after-result has been sought for for years. John F. Erdmann (see *Annals of Surgery*) cites a series of selected patients and states in his arguments, that after careful consideration of such association as non-absorbable suture material, specific disease, hyperacidity, trauma of the tissues by clamps used for checking spillage and hemorrhage, producing an apposition while suturing, the use of tissue forceps of Allis and mouse tooth varieties, and the possibilities of suture producing infarcts and thrombi that may give rise to tissue destruction that we must finally therefore conclude that some of these patients have an ulcer forming idiosyncrasy. Such patients with marginal ulcer finally led up to cure

ful gastric content analyses until it was decided that hyperacidity was the cause. Therefore this must be eliminated by surgery if medication and diet did not do the work. Hence the more recent operation of excision of the acid-bearing section of the stomach as practised by Pfisterer, etc., and so strongly advocated by Berg and Lewishohn of New York is logical.

Before considering the operations of choice, it is very necessary to digress and enter the field of the other specialties so closely associated with the diagnosis and treatment medically and by dietary means. Close association with the gastroenterologist and roentgenologist is essential to reduce all failures and all operative procedures to a minimum. The roentgenologist is called first to give us his understanding of the size of the ulcer, its penetration as to whether it is below the mucosa, whether it is in the deeper muscular structure or if through the muscular and threatening perforation.

Some few months ago Dr. Cole of New York called a meeting of surgeons, clinicians and gastroenterologists together to consider the subject of ulcer of the stomach excluding all ulcers bearing upon the duodenum, showing a beautiful series of X-ray pictures and some schematic drawings added to a most superb movie of the stomach in action. The differences in a mucosal, dissecting, submucosal, muscular, perforating ulcer were clearly demonstrated. His belief that the muscular, dissecting and perforating were objects of surgical interest after medical treatment failure was conceded by all present. His showings of ulcer under observation by the gastroenterologist were in many instances interesting from the repair standpoint. In addition his evidences of the non-repair and at times progression of ulcers under treatment accentuated his advice to operate in these instances.

To summarize, the close association of the roentgenologist is not only conceded as advisable but it is demanded that X-rays at intervals associated with medical and dietary attentions is of special value both as to observation of repair or non-repair and as a definite signal to interference or not in a surgical sense.

Much has been said and will be said by our medical associates in regard to the repair of ulcers under treatment. Much can be said by all of us on the subject of intermittence of all diagnostic symptoms and signs whether or not under gastroenterological attention. Chief of all to remember is the remission of symptoms during the warm weather and the reappearance of symptoms in the fall and winter aided by nerve strain, smoking, etc. The period of symptoms absence being longer than the symptoms presence by weeks to months and that this absence or remittance condition often fallaciously leads to medical cure diagnoses.

Subsequently shielding themselves and procrastinating return of symptoms with a new ulcer formation diagnosis, we as surgeons know by our living autopsies that these patients pre-

sent one ulcer and no other site of scar or ulcer in the great proportion of instances. Nevertheless, I cannot but feel indebted to our associated gastroenterologists in affording the relief that proper medication, dietary, etc., produce and admit with them that they must without question produce their proportion of cures. I also accept that, barring the occasional perforation and the occasional repeated hemorrhage crises, their mortality should be low.

I do not operate and have not operated for some years in all ulcer cases. I do not operate and have not for some years operated in any ulcer case except the perforated, the positive obstructed with dilatation and retention, those of repeated hemorrhage and those of a malignant suspicion, without the patients producing all X-ray evidences and of more than one thorough gastroenterological treatment and observation. Alvarez of Rochester has during the past year written the most intelligent and, to me, most practical paper on the medical and dietary treatment of ulcer.

Too strong advice cannot be given to thoroughly examine all these patients for gallbladder and appendicular association. The former, thanks to the work of Cole, Graham, et al., in the use of the dye in radiographing our patients, is far more readily discovered although the percentage of definiteness is not yet large enough for the operator to prevent his very careful examination of the gallbladder while attending to the ulcer area.

Having considered some of the operations especially those for ulcers and complications the operations for gastric ulcers are in order. The field occupied by the ulcer is of importance, those in the lesser curvature and as a rule involving the pyloric antrum are readily excised in the majority of instances, whereas the large indurated and extensively infiltrated had better be dealt with by resection of half of the stomach, bearing in mind always that the gastric ulcer of over a ten cent piece in size may be malignant.

The excisable ulcer may be dealt with by the cautery and excision method of Balfour or simple flap excision with closure by suture entailing the least bit of diminution of caliber. The ulcer occupying the posterior wall of the stomach, when of small size, may be removed by either a trans-gastric resection or may be approached and removed through the lesser peritoneal pouch. I have never added a gastroenterostomy to this type of operation as I have never felt the necessity for it nor can I recall any of my patients so treated not making a smooth recovery.

The indurated and infiltrating ulcer demanding resection of half or more of the stomach is treated by one of several operations. Billroth number one or number two having many advocates. Personally I am very much attached to the Polya method. The anti-colonic of Balfour has never appealed to me although he presents a series with exceptionally low mortality. Theoretically, when first advocated I objected to the

operation on the standpoint of its having an obstruction menace by the angulation of the colon over the jejunum unless an exceptionally long jejunal loop were made. Nevertheless, I used this operation in a fair number of patients and had one obstruction by secondary growth producing an angling or kinking obstruction that would not have occurred had I adhered to the usual Polya method. A subsequent non-malignant kink obstruction, has caused me to discard the anti-colonic operation. A further argument for my not liking the operation theoretically was the long loop of jejunum necessary to make the anastomosis, contending that this loop would require an added jejuno-jejuno-ostomy. This either happened to Balfour or he saw the dangers as for some time he has been adding the necessary jejuno-jejuno-ostomy. This additional operation is not only a step backward in my opinion, but is an added risk in the hands of the operator who has not the facile hands and technique of Balfour. I cannot accede to his argument that the anti-colonic takes less time and has a lower mortality than the operation requiring the suture of but one anastomosis.

The operation of Pfisterer for duodenal ulcer as strongly advised by Berg and Lewisohn of New York at the present time does not convince me enough to accept their dictum. The statistics of Berg and Lewisohn, show that 34 per cent of all gastroenterostomies are followed by marginal ulcer of which 16 to 18 per cent were operative proofs and the balance were symptomatic proofs.

Barring all questions of mortality in these various operations for duodenal ulcer, I would still be inclined to operate as follows, resection only in the ulcers of large size, markedly infiltrated and where a question of malignancy arises. That until further proofs, gastroenterostomy with its records of cures, improvements, etc., should be the operation of choice in the hands of the general operator. That with the knowledge of the gastric analyses in pernicious anemia one must feel that the rendering of the contents of the stomach totally antacid may be productive of pernicious anemia.

The sleeve resection for large ulcers in the mid section of the stomach, lesser curvature and posterior wall even with the argument of pernicious anemia is not as appealing to me today as a resection would be, bearing in mind always as before stated the possibility of malignancy in the gastric ulcer over a ten cent piece in size.

The anterior perforated gastric ulcer (rare as compared to duodenal) can as a rule be treated by excision and suture. While the chronic perforation is usually, one might say always, on the posterior wall, must in the great proportion of instances receive the radical operation of resection.

Marginal ulcers may call for one of several operations depending largely on the site of the ulcer and its state. These ulcers we have found

chiefly in the jejunum and in the distal arm of the anastomosis. They have been found in the gastric side. I recall one a full inch from the gastro-intestinal margin in the posterior wall of the stomach.

In the event of the duodenal ulcer having all the ear-marks of being healed, a return of the gastro-intestinal tract to normalcy is in order, the marginal ulcer is excised and the intestinal and gastric openings closed. In the event that the ulcer for which the primary operation was done is still active, resection of half of the stomach and the ulcer bearing area of the duodenum is done or repair of the marginal ulcer zone by resection of the ulcer if gastric and renewing the gastroenterostomy or resection of the portion of the jejunum if the ulcer is in the intestine and then doing an end to end jejunostomy.

In the event of the original ulcer being repaired then a return to normalcy of the stomach and intestine is to be done. After the surgical procedure and after his discharge, the patient is referred to a gastroenterologist for further care and attention. I do not feel that when I have discharged the patient that he is well but that his abnormal physical and mechanical condition has been repaired. "Put yourself in his, your patient's, place" has always appealed to me as the first step in our consideration of surgical interference. I would therefore suggest that our surgical enthusiasm should not carry us over the border-line of unnecessary interference and at the same time that our bump of experimentation does not cause us to fall short of giving surgical relief.

To SUMMARIZE I would operate in the following types of cases

- 1 Where there is a perforation
- 2 In repeated hemorrhage
- 3 Where there is evidence of suspicion of malignancy
- 4 Where there is X-ray evidence of perforating
- 5 Where there is duodenal obstruction
- 6 Where no evidence of repair exists after careful medical and dietary treatment
- 7 Where there is hour-glass contraction in the stomach
- 8 Where the ulcer is dissecting or undermining

DISCUSSION

ROENTGENOLOGIST'S VIEWPOINT

DR A S MERRILL, Manchester. So much has already been said that I will try to be brief and not bore you by repetition of things said before.

I believe that this method of examination is undeniably a credit to American medicine. Dr Francis Williams, who was almost if not quite the first man to study the human stomach by the opaque meal, studied the gastric action and recognized the most obvious lesions. From this foundation we gradually progressed to the study

and recognition of more obscure lesions and those in more inaccessible parts of the stomach. The recognition of ulcer of the duodenum was a later development. That was first described by Dr Cole of New York, I think. Drs Carmen, Case, George, Holmes and others have placed the examination of this region on a basis where the findings are reliable.

I want to thank the readers of these papers for their words of appreciation of the X-Ray. It was most gratifying to hear such an unbiased tribute to our work. All men would not be as fair as they.

Mention has been made here of the rarity of the old-fashioned ulcers now. In the city where dispensary and hospital treatment are so easily available, they are constantly receiving cases earlier for examination, much earlier than formerly, making it an easier problem to recognize these lesions in their early stages.

I would like to emphasize the value of repeated examinations. Repeated examinations are just as valuable in this study as in any other. Often small lesions are suspected, and by repeated examinations conditions not recognized in the first observation would be identified in many cases. We know the picture is largely a picture of spasm. We used to be told by the surgeon "We find an ulcer but less deformity than the X-Ray showed." It is recognized now that a large part of the deformity is spasmodic. Spasm without ulcer could be ruled out in most cases by repeated examination.

I have followed the method of Dr Holmes of Boston who used practically the same method as Dr Carmen of Rochester. He was a very strong advocate of the fluoroscopic examination of the stomach and duodenum. In watching the passage of the meal through the oesophagus and along the gastric wall and making a study of anything that attracts our attention we may often recognize something which might not be seen if the examination was deferred until the stomach was filled. In passing, I want to say that I think it is absolutely wrong to entrust this part of the examination to the technician. It should be only in the hands of a man who possesses as much knowledge as possible of the anatomy, physiology and pathology of the region and can recognize disturbances of function of these parts.

I have tried, as we always do to encourage post-operative examination as it is very valuable in following the course of these cases.

DR H N KINGSFOLD Hinner. There is another condition which in my opinion is very important, and which we frequently lose sight of, namely, the circulation in the stomach wall. We are taught that the normal anastomosis and collateral circulation in the stomach is just about perfect and that thrombosis is next to impossible or very infrequent. In studying normal

sent one ulcer and no other site of scar or ulcer in the great proportion of instances. Nevertheless, I cannot but feel indebted to our associated gastroenterologists in affording the relief that proper medication, dietary, etc., produce and admit with them that they must without question produce their proportion of cures. I also accept that, barring the occasional perforation and the occasional repeated hemorrhage cases, their mortality should be low.

I do not operate and have not operated for some years in all ulcer cases. I do not operate and have not for some years operated in any ulcer case except the perforated, the positive obstructed with dilatation and retention, those of repeated hemorrhage and those of a malignant suspicion, without the patients producing all X-ray evidences and of more than one thorough gastroenterological treatment and observation. Alvarez of Rochester has during the past year written the most intelligent and, to me, most practical paper on the medical and dietary treatment of ulcers.

Too strong advice cannot be given to thoroughly examine all these patients for gallbladder and appendicular association. The former, thanks to the work of Cole, Graham, et al., in the use of the dye in radiographing our patients, is far more readily discovered although the percentage of definiteness is not yet large enough for the operator to prevent his very careful examination of the gallbladder while attending to the ulcer area.

Having considered some of the operations especially those for ulcers and complications, the operations for gastric ulcers are in order. The field occupied by the ulcer is of importance, those in the lesser curvature and as a rule involving the pyloric antrum are readily excised in the majority of instances, whereas the large indurated and extensively infiltrated had better be dealt with by resection of half of the stomach, bearing in mind always that the gastric ulcer of over a ten cent piece in size may be malignant.

The excisable ulcer may be dealt with by the cautery and excision method of Balfour or simple flap excision with closure by suture entailing the least bit of diminution of caliber. The ulcer occupying the posterior wall of the stomach, when of small size, may be removed by either a transgastric resection or may be approached and removed through the lesser peritoneal pouch. I have never added a gastroenterostomy to this type of operation as I have never felt the necessity for it nor can I recall any of my patients so treated not making a smooth recovery.

The indurated and infiltrating ulcer demanding resection of half or more of the stomach is treated by one of several operations. Billroth number one or number two having many advocates. Personally I am very much attached to the Polya method. The anti-colonic of Balfour has never appealed to me although he presents a series with exceptionally low mortality. Theoretically, when first advocated I objected to the

operation on the standpoint of its having an obstruction menace by the angulation of the colon over the jejunum unless an exceptionally long jejunal loop were made. Nevertheless, I used this operation in a fair number of patients and had one obstruction by secondary growth producing an angling or kinking obstruction that would not have occurred had I adhered to the usual Polya method. A subsequent non-malignant kink obstruction, has caused me to discard the anti-colonic operation. A further argument for my not liking the operation theoretically was the long loop of jejunum necessary to make the anastomosis, contending that this loop would require an added jejunojejunostomy. This either happened to Balfour or he saw the dangers as for some time he has been adding the necessary jejunojejunostomy. This additional operation is not only a step backward in my opinion, but is an added risk in the hands of the operator who has not the facile hands and technique of Balfour. I cannot accede to his argument that the anti-colonic takes less time and has a lower mortality than the operation requiring the suture of but one anastomosis.

The operation of Pfisterer for duodenal ulcers as strongly advised by Berg and Lewishohn of New York at the present time does not convince me enough to accept their dictum. The statistics of Berg and Lewishohn, show that 34 per cent of all gastroenterostomies are followed by marginal ulcers of which 16 to 18 per cent were operative proofs and the balance were symptomatic proofs.

Barring all questions of mortality in these various operations for duodenal ulcers, I would still be inclined to operate as follows, resection only in the ulcers of large size, markedly infiltrated and where a question of malignancy arises. That until further proofs, gastroenterostomy with its records of cures, improvements, etc., should be the operation of choice in the hands of the general operator. That with the knowledge of the gastric analyses in pernicious anemia one must feel that the rendering of the contents of the stomach totally antacid may be productive of pernicious anemia.

The sleeve resection for large ulcers in the mid-section of the stomach, lesser curvature and posterior wall even with the argument of pernicious anemia is not as appealing to me today as a resection would be, bearing in mind always as before stated the possibility of malignancy in the gastric ulcer over a ten cent piece in size.

The anterior perforated gastric ulcer (rare as compared to duodenal) can as a rule be treated by excision and suture. While the chronic perforation is usually, one might say always, on the posterior wall, must in the great proportion of instances receive the radical operation of resection.

Marginal ulcers may call for one of several operations depending largely on the site of the ulcer and its state. These ulcers we have found

In this series the conditions were as follows

Age Groups	Number of Cases	Percent of Cases in Group
0 10	42	5.5
10 20	174	21.4
20-30	313	40.8
30-40	149	19.7
40 50	51	6.6
50 plus	37	4.7

In this group of cases, therefore, the disease was practically as common in people over 50 years of age as in children under 10 and about the same as in the group 40-50

With these findings in mind I sent the following questions to 100 surgeons and hospitals in widely scattered sections of the country

Divided into decades Under 10 years, from 10 20, from 20 30, etc., in what ages was the largest percentage of cases?

Was the percentage materially different after the age of 50?

In your cases occurring in patients over 50 years of age, was the percentage of pus cases materially different than in patients of other ages?

What is your death rate in cases over 50 years of age?

The replies have been very gratifying, some of which I take the liberty to quote

The percentage as to ages holds true in the majority of replies (which I had from hospitals and surgeons in various sections of the country)

In all my replies, compiled from hospital records, the greatest number of cases, with the exception of five hospitals, occurred in the ages between 20 and 30. Following is a group of hospitals, with their results

City and Hospital	Number of Cases Reported	Percentage in Ages 20 30	Percentage of Cases over 50 Yrs of Age
Montreal (General)	1680	34	4.2
Boston			
City	903	29.5	4
Massachusetts Gen l	548	28	4.2
Indianapolis		30	10
Cleveland			
Lakeside	140	32	7
Clinic	721	32	8
Terre Haute			5
Meridian Miss	104	32	3
Denver Colo	132	36	9
Rochester Minn	775	32	9
Portsmouth N H	76	36	8
Hanover N H	1275	28	2.9
Brattleboro Vt	118	28	3
Minneapolis (Abbott)	96	34	6

Five hospitals had the greatest percentage of cases in the ages 10 to 20. Following is their report, the percentage being practically the same as the average of other hospitals for the next decade

City and Hospital	Number of Cases Reported	Ages 10 20	Percentage
Massachusetts General	548	216	39.4
Boston City	903	369	40.8
Brattleboro Vt	118	44	37
Harriston Hospital	104	37	35
Hanover N H	1275	436	35

Of our 37 cases occurring in people over 50 years of age 22 were in desperate condition at time of operation and were operated with the primary idea of saving life if possible. All of these 22 cases had suppuration in some form, some gangrene, some a large amount of free pus, and some a well developed peritonitis

The striking thing about these cases occurring in people over 50 years of age is the severity of the attack. Usually there are very few adhesions the peritonitis is widespread and there is little if any walling off. Oftentimes the appendix is completely gangrenous, the gangrene extending to the meso-appendix and to the walls of the caecum and is of a very friable character, making its removal as a whole extremely difficult. The inflammation extends to adjacent structures and the veins are badly engorged

Referring to the original principal causes cited above it is interesting to note their relation in regard to patients who have reached the age of 50

1 Obstruction in the Lumen. Most people have been led to believe that the appendix atrophies with age and that people who have arrived at 50 are more or less immune from attack of appendicitis. Anatomically the appendix is a continuation of the caecum of varying length. The walls are the same structure as the walls of the caecum. The extent to which these walls are developed varies widely and differs in individuals rather than in ages. Fibrous appendices and also well-developed ones are found at all ages. Lukewise wide open lumens which will receive a concretion, become obstructed, get the circulation shut off and become gangrenous, are found at all ages. Careful pathological examination of appendices removed at operation and those found at autopsy shows that the organ as a whole does not atrophy with age. What no doubt does happen is that the appendix becomes fibrous in many people as a result of repeated attacks of appendicitis which are not sufficiently severe to lead to operation

2 Obstruction in the Circulation. This probably plays a small part as a primary cause at any age, but is more of a factor later in life, when the vessels throughout the body begin to undergo pathological changes. The appendix receives its blood supply from the appendiceal artery, which is a branch of the posterior ileocecal. It crosses the ileum and runs down in the ileo-cecal angle, travels along in the meso-appendix and gives off a varied number of branches to

stomach sections we frequently see thrombosed vessels which never cause any trouble. Some stomachs, at least show multiple thromboses. The congenital abnormal distribution of the blood vessel is as common in the stomach as in other localities. Why doesn't this condition account for the so called ulcer forming habit?

In my opinion, when we do find out the cause of peptic ulcer, the treatment will be medical and surgical as it is now, also, the preventive treatment will be of practically no interest.

SUMMARY

DR JAMES W JAMESON, Concord. In the consideration of gastric or duodenal ulcer diagnosis, is, as in other conditions, of primary importance, and this is at times, by no means easy. Symptoms suggesting ulcer are often simulated by other conditions especially recurrent appendicitis, chronic constipation, gastritis due to improper diet or infections of the mouth. Needless to say these conditions must be ruled out and X-Ray examinations, especially fluoroscope examinations, should be made on all cases.

Medical treatment should be tried in all cases

at first, for a large percentage will be cured, especially those suffering from acute ulcers or ulcers with haemorrhage. The difficulty with medical treatment is that it requires a good deal of time, and often has to be repeated, so that patients frequently want relief by surgery feeling that then cure will be accomplished more quickly. However any surgical treatment must be followed by medical treatment if a satisfactory result is to be accomplished.

Surgery gives its best results in the thickened ulcers about the pylorus with symptoms of obstruction, and in ulcers of the duodenum, but is necessary in any indurated ulcer and in those with recurrent bleeding.

Excision of ulcer by knife or cautery followed by suture and a gastroenterostomy, if pyloric thickening is present, is probably the most satisfactory operation in the majority of cases, but partial gastrectomy with excision of the ulcer bearing area gives good results to some operators.

We are very fortunate in having had such instructive papers as Dr Brooks and Dr Erdmann have given us, and I feel that we are all grateful to them for coming here.

APPENDICITIS IN PEOPLE OVER FIFTY YEARS OF AGE*

BY EMERY M FITCH, M.D., F.A.C.S.†

SO much has been written on the subject of appendicitis that there hardly seems anything left of interest. Yet there is perhaps no disease which is so common or perhaps any which receives so much attention and in which the method of treatment is so universal.

Of all the abdominal organs the appendix is the one which is the most picked upon, either directly or indirectly, it being the custom of most clinicians to remove the appendix when ever they are inside the abdomen. Whether or not this is a wise procedure is a question of much debate.

In spite of close application by all the doctors in the entire world over a period of forty years, being the time elapsed since the true nature of appendicitis was demonstrated, the etiology is still somewhat obscure. There are no doubt many things which enter into the cause and no one thing which can be held out as a predominating factor.

Among the common causes are Obstruction in the lumen, such as concretions, obstruction in the appendiceal vessels causing circulatory disturbances, infection of the organ primarily or secondary to other bodily infection such as tonsillitis and grippe, sex, males being affected more often than females, traumatism either

from outward violence or from the action of a concretion inside the lumen, intestinal parasites, diet, and age.

It is with age that we are concerned mostly in this article.

The severity of appendicitis occurring in people of middle life and after has led me to attempt an analysis of this disease in its relation to people of fifty years of age and older. Our study has of necessity been confined to those cases which came to operative treatment, for it is impossible to get much history of cases of appendicitis in any age which recover or die without surgical interference. This is primarily a surgical disease, and any attempt to treat it medically has long since been relegated to obsolete methods.

It is the common belief among people generally and frequently among physicians that appendicitis is uncommon in infancy, fairly rare in children, very common in young adults, but extremely rare in people over fifty years of age. From this there has developed a belief that anybody who has passed middle life has practically become immune to the disease.

Our study is based upon 766 consecutive cases operated at the Claremont Hospital, the results of which I present with the hope that it may refresh in your minds a subject which is old yet ever new, for every case is individual in its peculiarities.

*Read at the Annual Meeting at New Castle, June 22 1927

†For record and address of author see This Week's Issue page 365

	Death Rate
Under 10 years	4.8
10 to 20 years	2.3
20 to 30 years	2.2
30 to 40 years	2
40 to 50 years	4.1
50 and over	21.6

I realize full well that it is an enormous task to go over records to ascertain the results of any particular disease, and I am greatly indebted to the doctors and hospitals who so generously helped me in this study.

CONCLUSIONS

Appendicitis becomes less frequent after the age of fifty.

The severity of the attack is much more marked, the pathological findings are more extensive, and the circulatory changes are pronounced.

The death rate is markedly increased.

DISCUSSION

FRED B. LUND, M.D., Boston. We thought we were through with discussions of appendicitis, but this spring I have heard two very important and interesting papers on that subject. This paper of Dr. Fitch's is one and the other was presented at the meeting of the American Medical Association in Washington. I don't recall the name of the writer. As he stated, the recovery of the patient depends more upon the medical man than upon the surgeon. There is a large educational institution near Boston where one doctor looks after the students and it was remarked that that doctor had not lost a patient in twenty-four years. This is not so because he has had one death. However, this good

record is due to the fact that he has made a diagnosis before the symptoms of peritonitis took place. The classical symptoms of appendicitis do not appear until peritonitis has developed and one is most successful when one operates in the presence of pain even if there is no temperature and no vomiting, nothing but the pain.

One of the reasons, as Dr. Fitch has well said, why we do not have symptoms of acute appendicitis in people of forty and over is that if the appendix is going to perforate, it perforates before that age. Never think that because a patient is old he cannot have an acute abdominal disease. Certainly the appendix is not obliterated in all old people.

DR. TAYLOR, Portsmouth. Dr. Fitch's paper was interesting and he must have taken a great deal of time studying into the matter. I feel that with appendicitis in people over 50 years of age the attacks are usually very severe, and as a rule they are cases in which the appendix is badly affected or in which there is an abscess. I think the main point is not to do too much in these cases. The kidney has a great deal to do with the recovery of people over 50, and they have to be watched very carefully. I remember one man I had about 76 years old with a bad appendix. I removed the appendix and he was doing very badly about the fourth or fifth day. I washed his stomach out and could not get the bowels to move. However, a patient confined in a bed opposite suddenly became confused, climbed up on my patient's bed and danced the Charleston over his abdomen before he was subdued. This rather crude form of massage had its good effect as the bowels began to move in a short time and the patient made an excellent recovery.

AFTER EFFECTS OF TOXEMIA OF PREGNANCY*

BY FRED ELLSWORTH CLOW, M.D.

UNTIL a very recent time it was generally accepted that there were no after effects of the toxemia of pregnancy, except the infrequent occurrence of aphasia, hemiplegia and puerperal insanity. Modern textbooks usually dismiss the subject of remote prognosis with the statement that only in cases dependent on pre-existing renal disease were later pathological changes to be anticipated. Discussion of this point centered around the prospects of the mother and baby in subsequent pregnancies. Once the patient recovered from the more or less acute condition, the urine becoming free of albumin and casts, with disappearance of edema, and visual disturbances, the return of blood pressure to a point approaching normal the future seemed unclouded. Usually by the end of the

third week the patient was safely convalescent (de Wesselow and Watt).

Despite the enormous literature on the subject of late toxemias of pregnancy little mention has been made, until within the past three years, of the part these conditions play in the after life of the mother.

My own interest in this phase of the subject was excited by the consultation in the same week, with three women, in the early forties, each of whom presented nearly identical signs and symptoms, and each of whom had experienced a toxic pregnancy.

I believe that the recognition of the fact that a woman is possibly severely harmed by the occurrence of toxemia in the child bearing process, has been tardy, and that it is bound to be an important factor in the lives of many women. When this view is more generally accepted, indi-

*Read at the Annual Meeting at New Castle, June 22, 1927.
†For record and address of author see "This Week's Issue" page 365.

the appendix. The number of branches, varying somewhat with the length of the appendix, are from two to eight. The return supply is by the appendiceal veins, which accompany the arteries and are branches of the portal system. Thus the circulation to the appendix is terminal. The walls of the vessels are very thin. The vessels run in the subserous coat and supply both walls of the appendix. Oftentimes the meso-appendix does not extend the whole length of the appendix, and the terminal portion has a very poor blood supply. When the caecum becomes filled with fecal matter and fecal masses gather in the ileum, the circulation becomes obstructed and gangrene of the appendix may result, or the nutrition of the organ is so impaired that bacteria can more easily win in their fight with the phagocytes. This is more liable to happen in patients who have arrived at the age of general circulatory disturbances, and this may be a prominent factor in the large number of pus cases which occur in proportion to other cases in these people who have arrived at the down grade of life.

3 Infection. Bacteriological examination of free pus and of appendices which do not have pus shows the colon bacillus to be the principal cause of infection, then streptococcus, and rarely the tubercular germ. Secondary infection, not uncommon in young adult life, is much more rare in older people, because they have gone by the age of infection. Abscesses at the roots of teeth are blamed for many ills, and there is little doubt but that they may be responsible for some infected cases occurring in the decades between 20 and 40, this being the age when teeth begin to break down. It has been stated that the amount of lymphoid tissue in the appendix is greatly diminished after the age of twenty. But this statement is open to doubt. The fact that less lymphoid tissue is found is due to an individual variation rather than to age. It would be impossible to tell a patient's age or to give even a rough guess by a microscopical examination of the appendix.

4 Sex. In our 37 cases over 50 years of age, 24 were male, 13 female. This is about the general average for all ages.

5 Traumatism. In very few cases at any age have we been able to show direct traumatism from outward violence. If traumatism has figured as a material factor, it has been from the action of a concretion. Definite foreign body has only been found once in our series of 766 cases, this being the stem end of a date.

6 Diet. People in New England live on a mixed diet and this can hardly be considered a cause in relation to the different ages, except possibly in the very young, certainly not in people over 50 as compared with the ages between 20 and 30.

7 Age. People over 50 years of age have become more stoical in their ability to bear pain. The person between 20 and 40 has a cramp in the abdomen. He immediately thinks appendicitis and makes his own diagnosis, then goes to a doctor. The doctor may have trouble convincing him that he has not an attack, or he may operate him on slight symptoms. The person who has arrived at the age of 50 without an attack gets a pain in the abdomen, and he is very loath to believe that he has appendicitis. He worries along for hours or days, and consults the doctor as a last resort, then only to doubt the diagnosis, so that he is more apt to get a late operation and oftentimes not until suppuration has taken place.

One factor which must be considered is that a great many people in these days have had the appendix removed long before they arrive at the age of 50. This percentage is fast growing larger, for operations are continually becoming safer and simpler, and young adults are being operated on slighter symptoms now than they were even a few years ago, and much more frequently than they were twenty years ago.

In looking over the record of 750 industrial examinations I found that in these healthy individuals who came to examination simply because of a shop requirement, 36 had had the appendix removed. These examinations were conducted on people between the ages 16 and 40, the majority were in a good degree of health, and 5% had an appendiceal scar.

In my questionnaire, the replies as to per cent of mortality were very unsatisfactory, this question either being ignored or guessed at, or else the records were not kept in a way that the death rate could be determined. The results that I did obtain covered only a period of from one to three years but show a rate of from 19% to 50% in people over 50 years of age, while the average for all ages was only 1.9% to 4%. Our own results show a mortality rate for all ages of 3.6%, and the mortality in cases over 50 years of 21.6%. Our series covers a period of 20 years and includes cases operated before the installation and development of complete modern hospital equipment.

Of the 37 cases over 50 years of age eight died, giving a death rate in this class of patients of 21.6%.

There were 24 cases between the ages of 50 and 60, with one death, making the death rate 4.1%.

There were 11 cases in the ages between 60 and 70, with six deaths, making a death rate of 54.5%.

There were two cases over 70, with one death, or 50% mortality.

Following is a table of our death rate, grouped according to decades.

ted for in any other way 67% of Harris' group showed chronic nephritis one year after pre-eclamptic toxemia

Adopting the criterion of Herrick and Corwin of a systolic blood pressure of 140 as evidence of hypertension, 65% of my cases fall in the hypertensive group. The average age of these women is 40.2 years. The symptoms complained of are dyspnoea and palpitation on slight exertion, dizziness, nocturia and in two with systolic pressures above 200, anginal pains. The objective signs of displaced heart apex, accentuated aortic second sound, palpable peripheral arteries and abnormally high systolic readings occurred in all patients who presented themselves for symptoms and in another group who were entirely unaware of any change from normal well-being. One patient has in addition severe retinal changes. One other patient who has been blind in two successive pregnancies, and those with systolic readings above 200 mm, show tortuosity of the retinal vessels. Renal change was prominent in ten with low specific gravity figures, occasional albuminuria, low P. S. T., excretion and poor water excretion.

The factor of elapsed time since the toxic pregnancy is evidently of some importance in these cases though it is by no means constant. One patient prematurely delivered for toxemia in March, 1927, has at every observation shown a systolic reading above 160. One patient delivered by Caesarean Section in 1921, under constant supervision has never shown normal blood pressure figure. One patient who had eclampsia in her fourteenth, fifteenth and sixteenth pregnancies has had hypertensive disturbance since the earlier event. This is contrary to the usual experience of a return of the blood pressure to normal within three weeks, coincidently with improvement in the renal and general condition.

In the cases reported by Herrick and Corwin over 40% showed higher readings in subsequent pregnancies. I cannot present accurate data on this point, though in my series, subsequent pregnancies were characterized by a more severe type of toxemia, which showed itself at an earlier period of gestation.

It is impossible to tell in advance which patient will have a serious complication in pregnancy. Not even the history of a nephritis, and a serious one, at that, will always lead to difficulties. It is not safe to predict the events of the next pregnancy. Many primiparae have had toxic pregnancy, and followed immediately with a second uneventful childbirth, leading to a more or less accepted rule, that eclampsia gives the individual a sort of immunity.

In connection with the belief that all these patients who show after-effects, probably have an underlying nephritis I can cite but one case who is placed in this series because of hyperemesis in her first pregnancy.

R. P. At seventeen years had diphtheria in 1904 followed by subacute nephritis with edema anemia

albuminuria reaching severe form in 1906. In 1907 all traces of this disease had disappeared. She married and gave birth to three children in 1909, 1912 and 1916 respectively with perfectly normal pregnancies. Now at the age of forty she is in perfect health with no signs of cardiac vascular change and apparently normal renal function.

In the past and even in modern textbooks the statement is made and it has been assumed that "a pre-existent renal lesion, probably aggravated by the toxemia but in its origin independent of it, therefore continuing its course after delivery" would account for those cases whose condition never became normal. This assumption is attacked by Spalding, Shevky and Addis, who have shown that the renal lesion is a continuation of altered function which begins in uncomplicated pregnancy toxemia, making the nephrosis important not before but after delivery, from failure of the lesion to heal.

Not one of my patients who had severe toxemia gave a history of previous disease even remotely suggesting a nephritis.

Litzenberg in discussion of Spalding's paper stresses the point that women who are delivered apparently in time to save the kidneys nevertheless are left with permanently damaged organs. Contrary to these opinions Zondick and Jakobowitz found in examining women one to seven years after delivery slight evidence of established damage.

Hertz feels that it is prudent to watch these women, especially for high blood pressure, for ten or fifteen years. A permanent hypertension, with albumin and signs of renal insufficiency are not infrequently encountered. Women who have survived an attack of eclampsia are subject to crises of severe hypertension which appear suddenly. One case of this type occurred in my series.

Harris, in a careful survey of 111 patients at the end of one year after delivery, reported the following findings as to patients with nephritis following:

Eclampsia three out of 24

Pre-eclamptic toxemia 33 out of 55

Nephritic toxemia with or without convulsions 30 out of 30

His findings indicate that the late effects of eclampsia and particularly pre-eclamptic toxemia are more severe than are generally supposed. There is no justification for assuring those who have suffered from eclampsia or pre-eclamptic toxemia that they may face future pregnancies without fear of toxic complications.

In the present study, time has not shown that the life of any patient has been shortened or that serious handicap has occurred but the fact remains that a considerable number have symptoms leading a careful observer to predict that the expectation of life must be less than that of women who have not suffered such a strain on the cardio-vascular renal system. If the later developments are evidence of the manner in

cations for the treatment of toxemia, particularly in the earlier months of gestation, and particularly in women who have already had toxic pregnancies, may need revision

Total cases of Toxemia..... 41

1 Pernicious Vomiting..... 10
Living 10

2 Severe Toxemia..... 31
Living 28
Dead 2
Unknown 1

Total Pregnancies..... 59

Severe Toxemias

Primiparae 21
Multiparae 10

Type of Toxemia

Pre-eclamptic 10
Eclamptic 21

Recurrence of Toxemia in..... 13

Blood pressure measurements of those whose pressure was considered above normal readings

Systolic	No	Pts
140 150	3	
150 160	3	
160 170	1	
170 180	5	
180 190	2	
190 200	2	
200 and over	2	
	18	

Toxemia of pregnancy embraces a miscellaneous group of conditions including pernicious vomiting, toxic jaundice, pre-eclamptic toxemia and eclampsia. In the group of cases of pernicious vomiting there was no mortality though Polak says that 20% of these women die. Until recently the cause of hyperemesis gravidarum has been a matter of dispute. The studies of Duncan, Harding and Titus tend to substantiate the clinical evidence of a vicious cycle of dehydration, starvation and vomiting.

Pernicious vomiting as a manifestation of toxemia is apparently, not necessarily followed by more severe toxic conditions. No patient, in the series under consideration developed severe toxemia, neither did the patients who developed severe complications give a history of previous vomiting beyond what is considered the usual event in 50% of pregnant women.

I have tried to trace all cases of severe toxemia of pregnancy which have occurred in private and hospital practice since 1905. Twenty-eight patients were examined, representing all but one of the patients who are now living. Of thirty-one patients, twenty-nine survived the emergency. One patient died in a convulsion following manual dilatation and delivery. One died of acute dilatation of the stomach after Caesarean Section. The incidence of toxemia is high in my group of cases because many patients received no ante natal attention and some were brought to the hospital when the emergency was already present.

No patient of the ten who had pernicious vomiting considered for this study exhibited signs or symptoms of sequelae of severe vomiting.

The factors considered in the present study embrace

1 Age at time of pregnancy apparently has no bearing on after effects. The series is too small to permit generalizations but the primiparae who have had no succeeding pregnancies appear to have reacted nearly as severely as women who have borne more children.

2 Past History. No patient in the series gave a history of previous nephritis. Blood pressure readings previous to the first pregnancy are available in five, each of whom showed normal figures. That many of the events in my patients occurred before the day of blood pressure measurements accounts for the omission in some of the others. Miller reports a series of cases followed both before pregnancy and after, where hypertension developing after childbirth persisted for a long time.

It cannot be proved absolutely that the woman has not brought to her pregnancy a kidney damaged from previous disease, dating even from very early life, but evidence is accumulating that not by any means, all women, who develop toxemia, do so because of an old nephritis.

3 Time elapsed to the present since the toxic pregnancy. In 50% of the cases this was over ten years.

4 The number of pregnancy in which complications occurred. This varied from the first to the sixteenth.

5 Recurrence of toxemia in subsequent pregnancies. One woman had convulsions in four successive pregnancies. Three had severe toxemia in three successive pregnancies. Four had severe toxemia in two successive pregnancies.

6 Present condition of patient as to signs and symptoms. I have made comprehensive physical study of those who had either signs or symptoms involving the cardio-vascular system with or without disturbance of renal function, excluding the group of pernicious vomiting cases. Ten voluntarily presented themselves because of symptoms.

It is evident that the after effects of toxemia concern the cardio-vascular or cardio-vascular-renal systems. This is the experience of Post and Stieglitz, who have found, in a series of 110 patients with severe hypertension, both male and female, 16% gave a history of toxic pregnancy and of women under the age of forty-five alone 50%. "The incidence of a history of past pregnancy with unusually marked toxemia in women with hypertension is high."

The frequent occurrence of hypertension due to all causes or any cause cannot be ignored. This group of women present blood pressure readings above the normal range. And, just as in the prenatal state, the blood pressure is a more important sign than albuminuria. Furthermore they have symptoms indicative of cardiac, circulatory, and renal disorder unaccount-

pressure sooner than you will in examination of the urine. Every time I find the blood pressure over 130 I watch the patient more carefully.

D E SULLIVAN, M.D., Concord. It seems to me that one of the most important things about this paper is the consideration of the methods whereby you would anticipate any after-effects of toxemia. I think it has been fully recognized that in years past women during pregnancy have been sadly neglected. Some of us who have practiced medicine for years remember that the first knowledge we had a woman was pregnant was when we were called to attend her in actual confinement. That, thank God, is a thing of the past. Now we have them apply very early, when they have a suggestion of pregnancy, so they are under observation closer than ever before. That is one of the most important things, as I have said, and we should bear it in mind in discussing this paper. In uremia I think the expectant treatment shows better results, in regard to mortality, than the active interruption and forced delivery by forceps or version. The most pleasing thing nowadays to me is the prompt attendance of expectant mothers, with the confidence that we are trying to care for them and advise them.

FRED E. CLOW, M.D., Wolfeboro. In the matter of the treatment of hyperemesis of pregnancy each patient is a law unto herself. I cannot adopt the point of view of a recent paper in the *Journal of the American Medical Association* where the author postulates that the condition is entirely due to psychic influences. The interruption of pregnancy should be done advisedly because many of these women are relieved by relatively simple measures.

Regarding the after-effects of toxemia of pregnancy I cannot say that in my group any woman's life has been shortened, but I do know that some women are in a damaged condition as a result of their experience. I certainly agree with Dr. Scribner as to the great value of blood pressure measurements as compared with dependence on urinalysis alone. The blood pressure elevation occurs before the changes in the urine.

MEETINGS

The Strafford County Medical Society held a regular meeting in Dover, N. H., November 17, 1927. An interesting paper was given by Dr. J. A. Hunter entitled "Pathological Points of Interest About Eyes, Ears, Nose and Throat." Another paper, "Ununited Fractures—The Use of Massive Bone Graft," was presented by Dr. P. N. Jepson of Boston, Mass. The State President, Dr. Emory M. Fitch of Claremont, N. H., spoke on "Physicians' Liability Insurance." This paper was fully discussed and a committee appointed to consider the matter.

Under new business the following nominations were made:

President, Dr. J. J. Morin of Rochester, N. H.
Vice-President, Dr. J. G. Sweeney of Dover, N. H.

Secretary-Treasurer, Dr. J. J. Buckley, Dover, N. H.
Auditor, Dr. J. C. Lawlor, Dover, N. H.
Censor, Dr. T. J. Morrison of Somersworth, N. H.
Delegates, Dr. Lawlor, Dover, N. H.; Dr. Stokes, Rochester, N. H.

Alternates, Dr. Buckley, Dover, N. H.; Dr. Bennett, Dover, N. H.

These nominations will be acted upon at the January meeting.

The present officers of the Strafford County Medical Society are:

President, J. A. Hunter, Dover, N. H.

Vice-President, J. J. Morin, Rochester, N. H.

Secretary and Treasurer, J. J. Buckley, Dover, N. H.

Auditor, J. C. Lawlor, Dover, N. H.

Delegates, Dr. Stokes, Rochester, N. H.; Dr. Batchelder, Dover, N. H.

Dr. J. J. BUCKLEY, Secretary

Dover, N. H.

The annual meeting of the Hillsborough County Medical Association was held at the Nashua Country Club Tuesday, April 3rd, 1928. An interesting program was arranged. Previous to this a business meeting including the annual election of officers and delegates was conducted.

D. G. SMITH, M.D., Secretary

The regular meeting of the Cheshire County Medical Society was held at Keene, N. H., November 18, 1927. During the business section a motion was made and unanimously adopted expressing the displeasure of the Society to the State Board of Registration in Medicine for reinstating Dr. W. M. Robb as a practitioner of medicine in New Hampshire. Another motion was made and carried instructing the Cheshire County delegates to vote for the Maine Defense plan for physicians. Dr. Emory Fitch of Claremont, N. H., President of the New Hampshire State Medical Society, addressed the meeting on different subjects concerning the welfare of the Medical Profession.

Under Program, Dr. Chester Jones of Boston, Mass., gave a very interesting and instructive talk on "Referred Pain in Gastro-Intestinal Disorders." The meeting was well attended.

A. A. PRATTE, M.D.

Secretary, Cheshire County Medical Society

NEWS ITEMS

Dr. Elizabeth Reed, formerly of St. Louis, Mo., specialist in Children's Diseases, has just opened an office at 23 West Street, Keene, N. H.

Dr. Edward O. Otis of 475 Commonwealth Avenue, Boston, Mass., formerly of Exeter, N. H., completed last year with Mrs. Otis a trip around the world. Dr. Otis, while a resident of New Hampshire, was the first to receive the Prav & Burnham Essay prize in New Hampshire in 1897. The subject was "Causes and Conditions of Pulmonary Tuberculosis and How to Avoid Them."

Dr. G. L. Laton has removed from Salem Depot to Los Angeles, Calif.

Dr. D. E. Wade of Salem Depot, N. H., has recently demised.

The following towns of Rockingham County, N. H., are in need of physicians: Newfields, Stratham, Deerfield, Northwood, Fremont, North Hampton, Kensington, Raymond.

which certain women react to the burden of childbearing, measures to prevent repetition of pregnancy are obviously justified

Women who have toxemia react possibly as they do to the wear and tear of life. Any woman who has had it deserves and should have prolonged observation and prophylactic instruction to prevent what may prove to be a gradually progressive serious condition.

It has not been shown that even expert prenatal supervision will prevent dangerous toxemia in succeeding pregnancies.

In this present study the incidence of recurrence of toxemia, nearly 50% is out of all proportion to the usual figure of 15% (Duhssen, quoted by DeLee) and even of the percentage of Williams and dePage, of one in five (quoted by Wesselow and Wyatt).

The length of time toxemia symptoms have persisted before delivery apparently bears no relationship to future events. In some of the cases showing most persistent hypertensive conditions toxic symptoms developed with disconcerting rapidity. It is impossible to differentiate between the cases of toxemia which will and will not develop the hypertensive syndrome.

In these days it is not unusual to speculate in the explanation of obscure situations, upon the influence of endocrine in balance as a possible etiological factor. The present discussion is not free from this thought. Many of these women both during and after pregnancy do present stigmata of thyroid and possibly ovarian dysfunction. Many of the same women will in the late thirties and early forties show still more of the same suggestive signs, rapid increase in weight, slow pulse, menstrual irregularities, dry skin, easy fatigability and pigmentation of the skin with their hypertension. But how much of this change may be due to the underlying cause can be a matter of conjecture only. The fact that improvement in well-being follows the use of thyroid extract is worth noting.

CONCLUSIONS

1 Toxemic pregnancy in a considerable proportion of cases leaves significant after effects, frequently occurring at a time considerably distant from the acute events.

2 These women demand careful attention in the years following their complications.

3 Those in the group comprising types which have not a complete return to normal health following toxic pregnancy should probably not, except for good reason, risk future childbearing.

4 The reaction of certain women to pregnancy is such that the future may necessitate a change in the indications for the interruption of pregnancy for the sake of mothers constitutionally unfit to bear the strain of gestation.

BIBLIOGRAPHY

- de Wesselow O L V and Wyatt J M. *Modern Views of the Toxemias of Pregnancy*. Paul B Hoeber Inc New York, 1926.
- Post W F and Stieglitz, E J. *American Journal of Medical Sciences* CLXXI 648 May 1926.
- Herrick W W and Corwin J. *Trans Assoc Amer Phys.* CLI 16 1926.
- Miller J L. *Idem*.
- Spalding B S, Shovky M C, Addis T. *Trans Am Gyn Assoc* XLVII 162 1922.
- Littenburg. *Idem*.
- Zondek B and Jakobowitz. *Klinische Wochenschrift* III No 4 135 Jan 1924.
- Heltz J. *Arch d mal du Coeur etc* Par 17 295 300 May 1924.
- Harris J W. *Johns Hopkins Hosp Bull* XXV 103 April 1924.
- DeLee. *Obstetrics* 4th Ed 1926.

DISCUSSION

A W MITCHELL, M D, Epping. The hour is late and the time is short so I shall take but a minute in discussion of Dr Clow's most excellent paper for there seems little to add to it and nothing to subtract therefrom.

We are indebted to the Doctor for bringing to us today new data and suggestions relating to a very old subject in a very important branch of our profession.

No more serious and sacred duty rests upon us as physicians than that, like the faithful pilot, of guiding the expectant mother through the always more or less dangerous journey incident to pregnancy, delivery and recovery.

This is the most important and serious part of a woman's life voyage and however pleasant the weather may be it is fraught with real and potential dangers.

After its completion she is practically never the same and whether for better or worse largely may depend on our care, attention and foresight.

"Foresight" is a happy word in this connection because it means seeing the dangers before they are encountered with a far better chance of avoiding them.

If we may guide her frail craft safely through the strait and into a safe harbor we may thank a kind Providence and feel a generous reward in the satisfaction of duty well done.

JAMES J BUCKLEY, M D, Dover. I find that most women who suffer during pregnancy suffer from disturbance of their kidney function. Every pregnant woman should have her urine examined every month in the first half of pregnancy and every two weeks in the later half. In some cases the kidneys function properly until the later months and then suddenly break down. I think most physicians should make examination of the urine during pregnancy. A great many times we will examine the urine and find it all right, and a great many times we find it not at all right. The thing I wanted to state is, and impress the fact, that it is especially essential to examine the urine every two weeks.

F P SCRIBNER, M D, Manchester. Just one point as to the diagnosis,—I think the blood pressure readings are of great importance as you will find evidence of trouble by means of blood

pressure sooner than you will in examination of the urine. Every time I find the blood pressure over 130 I watch the patient more carefully.

D E SULLIVAN, M.D., Concord. It seems to me that one of the most important things about this paper is the consideration of the methods whereby you would anticipate any after-effects of toxemia. I think it has been fully recognized that in years past women during pregnancy have been sadly neglected. Some of us who have practiced medicine for years remember that the first knowledge we had a woman was pregnant was when we were called to attend her in actual confinement. That, thank God, is a thing of the past. Now we have them apply very early when they have a suggestion of pregnancy so they are under observation closer than ever before. That is one of the most important things as I have said, and we should bear it in mind in discussing this paper. In uremia I think the expectant treatment shows better results in regard to mortality than the active interruption and forced delivery by forceps or version. The most pleasing thing nowadays to me is the prompt attendance of expectant mothers, with the confidence that we are trying to care for them and advise them.

FRED E. CLOW, M.D., Wolfeboro. In the matter of the treatment of hyperemesis of pregnancy each patient is a law unto herself. I cannot adopt the point of view of a recent paper in the *Journal of the American Medical Association* where the author postulates that the condition is entirely due to psychic influences. The interruption of pregnancy should be done advisedly because many of these women are relieved by relatively simple measures.

Regarding the after-effects of toxemia of pregnancy I cannot say that in my group any woman's life has been shortened, but I do know that some women are in a damaged condition as a result of their experience. I certainly agree with Dr. Scribner as to the great value of blood pressure measurements as compared with dependence on urinalysis alone. The blood pressure elevation occurs before the changes in the urine.

MEETINGS

The Strafford County Medical Society held a regular meeting in Dover, N. H., November 17, 1927. An interesting paper was given by Dr. J. A. Hunter entitled "Pathological Points of Interest About Ears, Nose and Throat." Another paper, "Ununited Fractures—The Use of Massive Bone Graft," was presented by Dr. P. N. Jepson of Boston. Mass. The State President, Dr. Emory M. Fitch of Claremont, N. H., spoke on "Physicians' Liability Insurance." This paper was fully discussed and a committee appointed to consider the matter.

Under new business the following nominations were made:

President Dr. J. J. Morin of Rochester, N. H.
Vice-President Dr. J. G. Sweeney of Dover, N. H.

Secretary-Treasurer, Dr. J. J. Buckley, Dover, N. H.
Auditor, Dr. J. C. Lawlor, Dover, N. H.
Censor, Dr. T. J. Morrison of Somersworth, N. H.
Delegates, Dr. Lawlor, Dover, N. H., Dr. Stokes, Rochester, N. H.

Alternates, Dr. Buckley, Dover, N. H., Dr. Bennett, Dover, N. H.

These nominations will be acted upon at the January meeting.

The present officers of the Strafford County Medical Society are:

President, J. A. Hunter, Dover, N. H.

Vice-President, J. J. Morin, Rochester, N. H.

Secretary and Treasurer, J. J. Buckley, Dover, N. H.

Auditor, J. C. Lawlor, Dover, N. H.

Delegates, Dr. Stokes, Rochester, N. H., Dr. Batchelder, Dover, N. H.

Dr. J. J. BUCKLEY, Secretary

Dover, N. H.

The annual meeting of the Hillsborough County Medical Association was held at the Nashua Country Club, Tuesday, April 3rd, 1928. An interesting program was arranged. Previous to this a business meeting including the annual election of officers and delegates was conducted.

D. G. SMITH, M.D., Secretary

The regular meeting of the Cheshire County Medical Society was held at Keene, N. H., November 18, 1927. During the business session a motion was made and unanimously adopted expressing the displeasure of the Society to the State Board of Registration in Medicine for reinstating Dr. W. M. Robb as a practitioner of medicine in New Hampshire. Another motion was made and carried instructing the Cheshire County delegates to vote for the Maine Defense plan for physicians. Dr. Emory Fitch of Claremont, N. H., President of the New Hampshire State Medical Society, addressed the meeting on different subjects concerning the welfare of the Medical Profession.

Under Program, Dr. Chester Jones of Boston, Mass., gave a very interesting and instructive talk on "Referred Pain in Gastro-Intestinal Disorders." The meeting was well attended.

A. A. PRATTE, M.D.

Secretary, Cheshire County Medical Society

NEWS ITEMS

Dr. Elizabeth Reed, formerly of St. Louis, Mo., specialist in Children's Diseases, has just opened an office at 23 West Street, Keene, N. H.

Dr. Edward O. Otis of 475 Commonwealth Avenue, Boston, Mass., formerly of Exeter, N. H., completed last year with Mrs. Otis a trip around the world. Dr. Otis, while a resident of New Hampshire, was the first to receive the Pray & Burnham Essay prize in New Hampshire in 1897. The subject was "Causes and Conditions of Pulmonary Tuberculosis and How to Avoid Them."

Dr. G. L. Laton has removed from Salem Depot to Los Angeles, Calif.

Dr. D. E. Wade of Salem Depot, N. H., has recently demised.

The following towns of Rockingham County, N. H., are in need of physicians: Newfields, Stratham, Deerfield, Northwood, Fremont, North Hamcton, Kensington, Raymond.

which certain women react to the burden of childbearing, measures to prevent repetition of pregnancy are obviously justified

Women who have toxemia react possibly as they do to the wear and tear of life. Any woman who has had it deserves and should have prolonged observation and prophylactic instruction to prevent what may prove to be a gradually progressive serious condition.

It has not been shown that even expert prenatal supervision will prevent dangerous toxemia in succeeding pregnancies.

In this present study the incidence of recurrence of toxemia, nearly 50% is out of all proportion to the usual figure of 1.5% (Dührssen, quoted by DeLee) and even of the percentage of Williams and dePage, of one in five (quoted by Wesselow and Wyatt).

The length of time toxemia symptoms have persisted before delivery apparently bears no relationship to future events. In some of the cases showing most persistent hypertensive conditions toxic symptoms developed with disconcerting rapidity. It is impossible to differentiate between the cases of toxemia which will and will not develop the hypertensive syndrome.

In these days it is not unusual to speculate in the explanation of obscure situations, upon the influence of endocrine in balance as a possible etiological factor. The present discussion is not free from this thought. Many of these women both during and after pregnancy do present stigmata of thyroid and possibly ovarian dysfunction. Many of the same women will in the late thirties and early forties show still more of the same suggestive signs, rapid increase in weight, slow pulse, menstrual irregularities, dry skin, easy fatigability and pigmentation of the skin with their hypertension. But how much of this change may be due to the underlying cause can be a matter of conjecture only. The fact that improvement in well-being follows the use of thyroid extract is worth noting.

CONCLUSIONS

1 Toxic pregnancy in a considerable proportion of cases leaves significant after-effects, frequently occurring at a time considerably distant from the acute events.

2 These women demand careful attention in the years following their complications.

3 Those in the group comprising types which have not a complete return to normal health following toxic pregnancy should probably not, except for good reason, risk future childbearing.

4 The reaction of certain women to pregnancy is such that the future may necessitate a change in the indications for the interruption of pregnancy for the sake of mothers constitutionally unfit to bear the strain of gestation.

BIBLIOGRAPHY

- de Wesselow O L V and Wyatt J M. *Modern Views of the Toxemias of Pregnancy*. Paul B Hoeber Inc. New York, 1925.
- Post W F and Stieglitz, E J. *American Journal of Medical Sciences* CLXXI 648 May 1926.
- Herrick W W and Corwin J. *Trans Assoc Amer Phys.* XLI 16 1926.
- Miller J L. *Idem*.
- Spalding B S, Shovky M C, Addis T. *Trans Am. Gyn. Assoc.* XLVII 162 1922.
- Litzenburg. *Idem*.
- Zondek B and Jakobovitz. *Klinische Wochenschrift* III No 4 135 Jan 1924.
- Heltz J. *Arch d mal du Coeur etc* Par 17 95 300 May, 1924.
- Harris J W. *Johns Hopkins Hosp Bull* XXV 103, April, 1924.
- DeLee. *Obstetrics* 4th Ed 1926.

DISCUSSION

A W MITCHELL, MD, Epping. The hour is late and the time is short so I shall take but a minute in discussion of Dr Clow's most excellent paper for there seems little to add to it and nothing to subtract therefrom.

We are indebted to the Doctor for bringing to us today new data and suggestions relating to a very old subject in a very important branch of our profession.

No more serious and sacred duty rests upon us as physicians than that, like the faithful pilot, of guiding the expectant mother through the always more or less dangerous journey incident to pregnancy, delivery and recovery.

This is the most important and serious part of a woman's life voyage and however pleasant the weather may be it is fraught with real and potential dangers.

After its completion she is practically never the same and whether for better or worse largely may depend on our care, attention and foresight.

"Foresight" is a happy word in this connection because it means seeing the dangers before they are encountered with a far better chance of avoiding them.

If we may guide her frail craft safely through the strait and into a safe harbor we may thank a kind Providence and feel a generous reward in the satisfaction of duty well done.

JAMES J BUCKLEY, MD, Dover. I find that most women who suffer during pregnancy suffer from disturbance of their kidney function. Every pregnant woman should have her urine examined every month in the first half of pregnancy and every two weeks in the later half. In some cases the kidneys function properly until the later months and then suddenly break down. I think most physicians should make examination of the urine during pregnancy. A great many times we will examine the urine and find it all right, and a great many times we find it not at all right. The thing I wanted to state is, and impress the fact, that it is especially essential to examine the urine every two weeks.

F P SCRIBNER, MD, Manchester. Just one point as to the diagnosis,—I think the blood pressure readings are of great importance as you will find evidence of trouble by means of blood

pressure sooner than you will in examination of the urine Every time I find the blood pressure over 130 I watch the patient more carefully

D E SULLIVAN, M.D., Concord It seems to me that one of the most important things about this paper is the consideration of the methods whereby you would anticipate any after effects of toxemia I think it has been fully recognized that in years past women during pregnancy have been sadly neglected Some of us who have practiced medicine for years remember that the first knowledge we had a woman was pregnant was when we were called to attend her in actual confinement That thank God is a thing of the past Now we have them apply very early when they have a suggestion of pregnancy so they are under observation closer than ever before That is one of the most important things as I have said, and we should bear it in mind in discussing this paper In uremia I think the expectant treatment shows better results in regard to mortality, than the active interruption and forced delivery by forceps or version The most pleasing thing nowadays to me is the prompt attendance of expectant mothers with the confidence that we are trying to care for them and advise them

FRED E CLOW, M.D., Wolfeboro In the matter of the treatment of hyperemesis of pregnancy each patient is a law unto herself I cannot adopt the point of view of a recent paper in the *Journal of the American Medical Association* where the author postulates that the condition is entirely due to psychic influences The interruption of pregnancy should be done advisedly because many of these women are relieved by relatively simple measures

Regarding the after-effects of toxemia of pregnancy I cannot say that in my group any woman's life has been shortened, but I do know that some women are in a damaged condition as a result of their experience I certainly agree with Dr Scribner as to the great value of blood pressure measurements as compared with dependence on urinalysis alone The blood pressure elevation occurs before the changes in the urine

MEETINGS

The Strafford County Medical Society held a regular meeting in Dover N H November 17 1927 An interesting paper was given by Dr J A Hunter entitled Pathological Points of Interest About Ears Nose and Throat Another paper Ununited Fractures—The Use of Massive Bone Graft was presented by Dr P N Jepson of Boston Mass The State President Dr Emory M Fitch of Claremont, N H spoke on Physicians Liability Insurance This paper was fully discussed and a committee appointed to consider the matter

Under new business the following nominations were made

President Dr J J Morin of Rochester N H

Vice-President Dr J G Sweeney of Dover N H

Secretary Treasurer, Dr J J Bucklev Dover, N H
Auditor Dr J C Lawlor Dover N H
Censor Dr T J Morrison of Somersworth N H
Delegates Dr Lawlor Dover N H Dr Stokes, Rochester, N H

Alternates Dr Bucklev Dover N H Dr Bennett, Dover N H

These nominations will be acted upon at the January meeting

The present officers of the Strafford County Medical Society are

President J A Hunter Dover N H

Vice-President, J J Morin Rochester, N H

Secretary and Treasurer, J J Bucklev Dover N H

Auditor J C Lawlor, Dover N H

Delegates Dr Stokes Rochester N H Dr Batchelder Dover N H

DR J J BUCKLEY Secretary

Dover N H

The annual meeting of the Hillsborough County Medical Association was held at the Nashua Country Club Tuesday April the 3rd 1928 An interesting program was arranged Previous to this a business meeting including the annual election of officers and delegates was conducted

D G SMITH M D Secretary

The regular meeting of the Cheshire County Medical Society was held at Keene N H November 18 1927 During the business section a motion was made and unanimously adopted expressing the displeasure of the Society to the State Board of Registration in Medicine for reinstating Dr W M Robb as a practitioner of medicine in New Hampshire Another motion was made and carried instructing the Cheshire County delegates to vote for the Maine Defense plan for physicians Dr Emory Fitch of Claremont N H, President of the New Hampshire State Medical Society addressed the meeting on different subjects concerning the welfare of the Medical Profession

Under Program Dr Chester Jones of Boston Mass gave a very interesting and instructive talk on Referred Pain in Gastro-Intestinal Disorders The meeting was well attended

A. A. PRATTE, M D

Secretary Cheshire County Medical Society

NEWS ITEMS

Dr Elizabeth Reed formerly of St Louis Mo specialist in Children's Diseases has just opened an office at 23 West Street Keene N H

Dr Edward O Otis of 475 Commonwealth Avenue Boston Mass., formerly of Exeter N H completed last year with Mrs Otis a trip around the world Dr Otis while a resident of New Hampshire was the first to receive the Prav & Burnham Essay prize in New Hampshire in 1897 The subject was Causes and Conditions of Pulmonary Tuberculosis and How to Avoid Them

Dr G L Laton has removed from Salem Depot to Los Angeles Calif

Dr D E Wade of Salem Depot N H has recently died

The following towns of Rockingham County N H are in need of physicians Newfields Stratham Deerfield Northwood Fremont North Hampton Kensington Raymond

The following towns have one physician and would welcome another Epping, Kingston, Londonderry, New Market, Candia Each of these towns offers a splendid opportunity for a young, well trained, progressive physician

JOHN W KNOWLTON, M.D.,
Secretary Treasurer Rockingham County
Medical Society

MISCELLANY

HEALTH CONDITIONS IN NEW HAMPSHIRE

Dr Charles Duncan, Secretary of the New Hampshire Board of Health reported in February that health conditions in that State were generally good except for the prevalence of hard colds with some influenza complications and that more cases of diphtheria had been reported this winter with five deaths

Dr Duncan deplored the unnecessary deaths due to diphtheria which he felt were the result of failure to call the physician early that is as soon as a child complained of a sore throat. Scarlet fever had been more prevalent but without fatal results

OBITUARIES

Dr George H Guptill died at his home, Raymond, N H, December 14th, 1927 Dr Guptill was born September 5th, 1864 He graduated from Bowdoin Medical School 1888 and was licensed to practice in New Hampshire the same year

He became a member of the Rockingham Medical Society in 1897 and was one of its censors at the time of his death

He was decisive in his opinion but always open to conviction and sympathetic in his character His general attitude toward the public affairs was helpful and genial He was admired by his profession and loved by every one

The last few years of his life were handicapped by a cerebral hemorrhage from which he recovered sufficiently to answer calls The morning of his death after responding to a call, he returned home and while resting in a chair, suddenly without apparent distress his spirit departed

His genuine rugged personality his hearty greetings, his frank disapproval in discussion of anything in which he did not agree will be greatly missed by the Medical Society

Funeral services were held at his late home in Raymond December 19 and were attended by representatives from the State and County Medical Societies as well as a host of lay friends from the community which he had served long and faithfully The final service was performed by the Masonic fraternity and under their escort his body was removed to the cemetery

He died as he had lived A servant to humanity
No man can do more

L R HAZZARD, M.D. *Necrologist*

SETH W JONES

Dr Seth W Jones of Portsmouth N H died at his winter home in St Petersburg Fla., after an illness

of five months He had been confined to bed since November 26, 1926, with diabetes complications and tuberculosis He formerly lived in Franklin, N H

Dr Jones was a member of the New Hampshire Legislature from 1911 to 1913 and Mayor of Franklin the same years At his bedside when he died were his wife and son Burlal will be in Concord, N H Dr Jones was born June 23, 1864

IN APPRECIATION

He was a friend, his neighbors say—
A friend to all the world

What greater tribute can one pay
To those who pass along life's way
Than this?

Through joy and sorrow, night and day,
He loved his fellow men,
And when life's burdens down he lay,
Twas then, men recognized this friend
And wondered, why, through all the years,
Down through the mist of smiles and tears
There had not more been done for him

Since his familiar voice was still
They found his place was hard to fill,
They found a lonesomeness around
And somehow things were different now
Since he was gone
They missed his kindness along
The way

And then somehow they seemed to know
The thing that long and long ago
They should have known
They recognized in him a flame
That makes for everlasting fame,
And lo, when he was gone his name
Was made

How often often this is so
As down along through life we go
The simple friend who, every day,
Makes light the load and smooth the way,
Himself the heavier burdens take
And gives himself for friendship sake
Through all his living, earthly days
Has garnered scarce a word of praise,
Must live his life and pass away
Before his friends and neighbors say—
He was indeed a friend!

By JOHN F HOLMES

ANOTHER LIFE SACRIFICED DURING SCIENTIFIC INVESTIGATION

A. Leroy Kirlee an assistant bacteriologist in the United States Public Health Service contracted Rocky Mountain spotted fever while engaged in research work on this disease at the Laboratory at Hamilton Montana He died February 25 ult This is the fourth death among workers engaged in studying this disease The other victims were Dr T B McClintic in 1912 G H Cowan in 1924 and N E Gettinger in 1922 This disease is highly infectious

Mr Kirlee graduated from the Montana State College in June 1927

Case Records of the Massachusetts General Hospital

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, M D

F M PAINTER, A B ASSISTANT EDITOR

CASE 14071

PAINLESS JAUNDICE AND ASCITES AT EIGHTY-TWO

MEDICAL DEPARTMENT

A man of eighty-two entered a hospital May 22 complaining of a painful sore on the heel of eleven months' duration

His past history is negative He had always been well

His mother died of heart trouble

Clinical examination showed a fairly well developed old man with dry and markedly jaundiced skin and jaundiced sclerae Lungs normal Heart borders left 8.5 centimeters from midsternum, right 2 centimeters Rhythm regular, with an occasional premature contraction No murmurs Artery walls markedly thickened Blood pressure 150/88 Abdomen normal A few internal hemorrhoids Genitals pupils and reflexes normal On the left heel a gangrenous area The great toe also showed beginning gangrene

The patient grew gradually weaker He was confused and very untidy at times, and became incontinent He continued in about the same condition from July until October 7, when he was discharged

December 17 he reentered with a temperature of 103°, pulse 110 and a great many râles at both bases The abdomen was distended There was marked jaundice He complained of no pain

Urine negative except for a trace of albumin at one of six examinations (Bile test not recorded)

Temperature after the first day 96.6° to 101° Pulse 58 to 125 Respirations 10 to 29

During the first week the general condition improved until the patient was able to sit up in a chair He had prolapse of the rectum on five occasions between December 23 and January 5, at first replaced without difficulty, but later accompanied by more and more bleeding He had increasing cough, and was incontinent January 5 the prolapse was tremendous and the bleeding profuse, requiring cautery before replacement The abdomen was distended

That day colostomy was done to relieve the rectal condition. At operation a large amount of ascitic fluid was found in the abdomen. Next day it was found that in coughing the patient had torn stitches free and had a hernia of about

two feet of small intestine A heavy retaining pack was put in place The colostomy worked well The patient grew very weak and had severe cough January 12 the temperature was 100°, the pulse 104 That day the patient died

DISCUSSION

BY RICHARD C CABOT M D

NOTES ON THE PHYSICAL EXAMINATION

Can we in any way join these apparently very different complaints that which causes jaundice and that which causes gangrene in an extremity?

DIFFERENTIAL DIAGNOSIS

What do we know about this case? We know he had ascites, jaundice, was eighty-two that he had some difficulties at the end which I think need not detain us much,—the rectal prolapse and the various things that followed it I do not think they had much to do with the outcome We have to account for the jaundice and the ascites You notice that there is very little said about pain There is no good evidence of local trouble like gall-stones or malignant disease causing pain He was not tapped, so that we did not have a first rate chance to examine the abdomen He may have had some mass palpable there

He has a somewhat incompetent heart but I should not judge that that is enough to account for the ascites We do not hear of edema elsewhere We do not hear of dyspnea I should judge that though his heart does not seem very strong it would not account for the ascites His urine is negative except for whatever bile he may have had, so I do not see how we can expect nephritic ascites Tuberculous peritonitis at his age would be extraordinarily improbable They had a chance to take a good look in the abdomen and they did not see any tuberculosis We are left with the possibility of malignant disease or some form of cirrhosis In the absence of any pain or mass I should say that we are facing the alternative between alcoholic cirrhosis and toxic hepatitis

What else ought we to consider? Perhaps toxic jaundice That would not account for the ascites, but that might be accounted for in some other way He had some fever We do not know about the leukocytes He did not have chills so far as I know On the evidence we have not much basis for a diagnosis of toxic jaundice It is more probable, especially when we think of the ascites, that this is an obstructive jaundice from one of the same two causes which I considered before I have the impression—I do not know whether I am wrong or not—that the toxic type of cirrhosis occurs in younger people in the great majority of cases I do not remember any cases at this age A great many do occur in younger people We are not told of his being tapped often If he was we do not know it Most cases of alcoholic cirrhosis have to be tapped many times But in this case jaun-

dice seems to be more prominent than portal stasis

Could the whole thing be gall-stones without pain? That would not account for the ascites. Gall-stones never cause ascites, and he certainly had it. We might say he has a heart weak enough to give ascites and gall-stones to cause the jaundice. That is possible but not likely.

We do not know what became of that great toe. There is nothing said about it at the end. We have to take it that it healed or it would have been mentioned more in detail. There is no evidence of its having anything to do with his death.

A STUDENT Could it be syphilis of the liver?

DR CABOT The diagnosis has to be made so far as I know on the evidence of syphilis plus evidence of a grossly irregular almost fragmented liver. But I never knew syphilis of the liver to kill anybody. I have known that in a large number of cases it has been found with something else.

A STUDENT Would you consider carcinoma of the rectum with metastases to the liver?

DR CABOT They had a good chance to get at it, and as they did not find it I do not believe it was there.

Cancer of the prostate with metastases to the liver? Of course one expects to feel something in the liver under those conditions, but I do not see how one is going to rule out the possibility of prostatic cancer, one of the silent cancers with metastases to the liver and resulting jaundice and ascites.

A STUDENT How do you account for the gangrene of the feet? Wouldn't syphilis explain that?

DR CABOT Gangrene in old people without sugar in the urine is ordinarily due to arterio sclerosis.

A STUDENT Do you think the hernia could have anything to do with metastases from malignancy of the intestine?

DR CABOT No, the stitches gave way and the intestines proceeded to come out. That was a local complication with no bearing on the diagnosis.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of small intestine with metastasis to the liver
Prolapse of the rectum

DR RICHARD C. CABOT'S DIAGNOSIS

Toxic hepatitis

ANATOMIC DIAGNOSIS

Infectious cirrhosis of the liver

DR TRACY B. MALLORY The only material I have on this case is a small piece of liver which was sent in to me, but it is one of the most interesting ones that I have seen. In spite of the fact that the case is quite undiagnosticable clin-

ically we have used it. The liver was found to be small, somewhat granular, increased in consistency and bile stained. From the small piece that I saw I was not able to add anything to that gross description. Microscopic examination showed in the bile ducts very marked lesions of two types. In the larger bile passages there was an acute cholangitis with dilatation and a great many polymorphonuclears. The smaller ducts showed a tremendous degree of proliferation, with considerable necrosis of the liver cells at the periphery of the lobules, and with polymorphonuclear infiltration between the bile-ducts and the remaining liver cells. That is without any question the picture of an infectious type of cirrhosis of the liver. The process however is still more complicated. Infectious cirrhosis is a rare disease in itself. The great majority of reported cases have been in young people, usually under thirty, and classically the liver is hypertrophied rather than atrophic. This liver shows a second lesion, and that is the presence of large amounts of hemosiderin and non iron reacting pigment, presumably hemofuscin. So we must also make a diagnosis of a relatively mild degree of hemochromatosis, which is presumably chiefly responsible for the atrophic size of the liver. The infectious element was added at a later stage, but must have persisted a number of months, perhaps years. It undoubtedly is the immediate cause of death.

It might be worth while to summarize the history of another case of infectious cirrhosis verified by biopsy of the liver on the following day. The second case was a woman of thirty-six, married, with a history of obscure onset of illness four months before the date of operation. The symptoms consisted only of lassitude, tiredness and vague indigestion. Two months after that she began to become jaundiced and also had fever. The jaundice increased progressively. The urine was not bile stained. The stools were never clay colored. The liver increased progressively in size. The white count just before operation was 40,000 with a relatively high number of polymorphonuclears, otherwise there was no abnormal differential count. The left lobe of the liver seemed to be hypertrophied considerably out of proportion to the right, and on that basis a diagnosis of abscess of the liver was made and an exploratory operation was done. The liver was probed and no abscess was found. It was found to be hypertrophied, with a diffuse sclerosis, and the microscopic picture again is one of cholangitis, proliferation of the smaller bile ducts, and fibroblasts, necrosis of the liver cells at the periphery of the lobules, but no destruction of the general liver structure. This case runs as close to a typical Hanot's cirrhosis as one often sees except, perhaps, for its acuteness. In Hanot's article on the disease named after him you will find histories very closely paralleling this.

DR CABOT Did anybody make the diagnosis in this case?

DR. MALLORY No, sir An exploratory operation was done on the basis of a suspected liver abscess and a small specimen of liver removed for biopsy On examination we were then able to make the diagnosis The patient died a month later, but no post-mortem examination was obtained.

CASE 14072

UPPER ABDOMINAL PAIN FOLLOWING MULTIPLE LAPAROTOMIES

SURGICAL DEPARTMENT

First admission A married woman thirty-five years old entered September 9 five and a half months before her last admission complaining of chronic nervousness, indigestion, acute epigastric pain and vomiting for four days

Thirteen years before admission she had a cesarian section for placenta previa Fourteen months later she had an operation for extra uterine pregnancy Ten years before admission she had the uterus tubes and one ovary removed A fibroid of the uterus and a cyst of the ovary were found Six years before admission a hard lump appeared at the site of the last incision and a year later she was operated on for fibroid tumor Soon after this operation she developed varicose veins in the left leg which grew worse until ten months before admission they were operated upon and a ventral hernia repaired With each operation she had become more and more "nervous" She worried over the slightest things For a year and a half she had had almost daily periods of weakness trembling "tightness" in the throat gas on the stomach and heartburn coming on immediately after meals, lasting from two to eight hours and relieved by food, not by soda She had occasional shooting pains all over her body She had attacks of epigastric pain During an attack her throat was so tight that she could not eat Eight times since the onset of these attacks she had had injections in the arm which often caused vomiting and always made her quiet September 5 she felt nauseated and vomited The following morning she began to have pain in the epigastrium which became steadily worse In the evening a physician gave a grain of morphia subcutaneously with no relief September 7 the pain was somewhat better That day she vomited two basinfuls of clear watery tasteless material The night of September 8 she vomited all at one time a basinful of green bitter material and was for the first time really relieved The day of admission she was able to retain a little coffee and gruel and felt much better For the past four or five days her bowels had been somewhat constipated

One brother died of tuberculosis

At eighteen she had malaria for one summer

The same year she had "ptomain poisoning",—swelling of the face, neck and upper chest with no other symptoms She had rare headaches She occasionally took alcohol For several years she had urinated once at night She thought she had lost five or ten pounds during the present illness

Clinical examination showed an obese woman with evidence of some recent loss of weight, moderately ill but in no pain The skin of the back and sacrum showed deep red maculopapules Tongue dry Sclerae slightly injected Heart slightly enlarged to the left Aortic second sound snapping but not loud Blood pressure 150/115 to 115/68 A low median abdominal scar Spasm in the right lower quadrant Sharply localized tenderness just above and to the right of the umbilicus Rectal mucosa thickened External hemorrhoids Pelvic examination showed the cervix slightly granular mucopurulent discharge fundus not felt left vault slightly fuller than right Left pupil greater than right, both dilated reactions normal Fundi and reflexes normal

Sugar and diacetic acid in the first of three specimens of urine, otherwise urine not remarkable Renal function 45 per cent Blood normal Wassermann negative Icteric index 8 Blood sugar 81 milligrams

X-ray examination with a barium meal a barium enema and a Graham test showed no evidence of organic disease

For the first two days temperature 99.5° to 101.1°, rectal pulse 115 to 96 Afterwards temperature 97.1° to 99.8° pulse 70 to 100 Respirations normal throughout

September 20 the patient was discharged with a diagnosis of constipation, abdominal adhesions and psychoneurosis

History of interval After her discharge she felt much better and remained free of symptoms on a low residue diet October 17 before breakfast she had an attack of nausea and vomiting of bile stained material followed by sharp epigastric pain which radiated straight through to the back and toward the heart Morphia did not relieve the pain or vomiting For the next three days her epigastrium remained sore She had hourly exacerbations of the pain which made her sweat and vomited whenever she moved in bed Deep inspiration caused the pain to shoot through to the back between the shoulders She belched much gas She took nothing by mouth except sips of water Enemas brought fairly good stools

Second admission, October 20 a month after her discharge

On clinical examination she was very nervous A red papular eruption over the face and back Slight tenderness in the epigastrium but no spasm No tenderness or spasm over the gall-bladder area Pelvic examination showed a freely movable non tender mass in the left vault, probably the ovary Left pupil reacted to light, right much more sluggish

dice seems to be more prominent than portal stasis

Could the whole thing be gall-stones without pain? That would not account for the ascites. Gall-stones never cause ascites, and he certainly had it. We might say he has a heart weak enough to give ascites and gall-stones to cause the jaundice. That is possible but not likely.

We do not know what became of that great toe. There is nothing said about it at the end. We have to take it that it healed or it would have been mentioned more in detail. There is no evidence of its having anything to do with his death.

A STUDENT Could it be syphilis of the liver?

DR CABOT The diagnosis has to be made so far as I know on the evidence of syphilis plus evidence of a grossly irregular almost fragmented liver. But I never knew syphilis of the liver to kill anybody. I have known that in a large number of cases it has been found with something else.

A STUDENT Would you consider carcinoma of the rectum with metastases to the liver?

DR CABOT They had a good chance to get at it, and as they did not find it I do not believe it was there.

Cancer of the prostate with metastases to the liver? Of course one expects to feel something in the liver under those conditions, but I do not see how one is going to rule out the possibility of prostatic cancer, one of the silent cancers with metastases to the liver and resulting jaundice and ascites.

A STUDENT How do you account for the gangrene of the feet? Wouldn't syphilis explain that?

DR CABOT Gangrene in old people without sugar in the urine is ordinarily due to arterio sclerosis.

A STUDENT Do you think the hernia could have anything to do with metastases from malignancy of the intestine?

DR CABOT No, the stitches gave way and the intestines proceeded to come out. That was a local complication with no bearing on the diagnosis.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of small intestine with metastasis to the liver

Prolapse of the rectum

DR RICHARD C. CABOT'S DIAGNOSIS

Toxic hepatitis

ANATOMIC DIAGNOSIS

Infectious cirrhosis of the liver

DR TRACY B. MALLORY The only material I have on this case is a small piece of liver which was sent in to me, but it is one of the most interesting ones that I have seen. In spite of the fact that the case is quite undiagnosticable clin-

ically we have used it. The liver was found to be small, somewhat granular, increased in consistency and bile stained. From the small piece that I saw I was not able to add anything to that gross description. Microscopic examination showed in the bile ducts very marked lesions of two types. In the larger bile passages there was an acute cholangitis with dilatation and a great many polymorphonuclears. The smaller ducts showed a tremendous degree of proliferation, with considerable necrosis of the liver cells at the periphery of the lobules, and with polymorphonuclear infiltration between the bile-ducts and the remaining liver-cells. That is without any question the picture of an infectious type of cirrhosis of the liver. The process however is still more complicated. Infectious cirrhosis is a rare disease in itself. The great majority of reported cases have been in young people, usually under thirty, and classically the liver is hypertrophied rather than atrophic. This liver shows a second lesion, and that is the presence of large amounts of hemosiderin and non iron reacting pigment, presumably hemofuscin. So we must also make a diagnosis of a relatively mild degree of hemochromatosis, which is presumably chiefly responsible for the atrophic size of the liver. The infectious element was added at a later stage, but must have persisted a number of months, perhaps years. It undoubtedly is the immediate cause of death.

It might be worth while to summarize the history of another case of infectious cirrhosis verified by biopsy of the liver on the following day. The second case was a woman of thirty-six, married, with a history of obscure onset of illness four months before the date of operation. The symptoms consisted only of lassitude, tiredness and vague indigestion. Two months after that she began to become jaundiced and also had fever. The jaundice increased progressively. The urine was not bile stained. The stools were never clay colored. The liver increased progressively in size. The white count just before operation was 40,000 with a relatively high number of polymorphonuclears, otherwise there was no abnormal differential count. The left lobe of the liver seemed to be hypertrophied considerably out of proportion to the right, and on that basis a diagnosis of abscess of the liver was made and an exploratory operation was done. The liver was probed and no abscess was found. It was found to be hypertrophied, with a diffuse sclerosis, and the microscopic picture again is one of cholangitis, proliferation of the smaller bile ducts, and fibroblasts, necrosis of the liver cells at the periphery of the lobules, but no destruction of the general liver structure. This case runs as close to a typical Hanot's cirrhosis as one often sees except, perhaps, for its acuteness. In Hanot's article on the disease named after him you will find histories very closely paralleling this.

DR GEORGE W HOLMES I cannot see the gall-bladder in these X-ray plates

DR RICHARDSON Then there is stronger evidence of biliary disease It seemed more obvious that there was an organic cause for pain, and the most probable was biliary disease, presumably stones in the gall-bladder causing repeated attacks of pain and perhaps occasionally blocking the cystic duct and causing cholecystitis Ulcer might lead to acute pain like this from perforation But she would not have it periodically The barium meal was negative There is the possibility of pancreatitis but there again we should have presumably one attack and not repeated attacks like this Another possibility is intestinal obstruction In this if the obstruction is in the small intestine not infrequently the pain is referred to the epigastrium For obstruction is the association of vomiting with these attacks Against it we have no definite evidence that she had obstruction of the bowel In fact the history speaks of bowel movements during the course of these attacks of pain

Those would be the most prominent causes We want to exclude the possibility of tabes, from the pupillary changes I do not see the other reflexes referred to here The Wassermann was negative, but I suppose that might be the case in tabes That, however, apparently was not considered very seriously, but it was felt that she had an organic cause for pain, and so she was explored, I imagine with the tentative diagnosis of gall stones and cholecystitis

PRE-OPERATIVE DIAGNOSIS

Cholecystitis ?
Recurrent intestinal obstruction "

OPERATION

Gas and ether Incision through the right rectus muscle into the upper abdomen The gall bladder was large, thin-walled and emptied with pressure There were no gall-stones The stomach, duodenum, pancreas and kidneys were negative Examination of the pelvis showed an ovarian cyst the size of a small orange arising from a rather long pedicle and freely movable The small intestinal tract was overrun from above downward It was free from adhesions everywhere except about two feet above the ileocecal valve Here the small intestine was firmly adherent over an area one inch in diameter to the ovarian cyst It seemed probable that the ovarian cyst, by changes in position, had kinked the intestine and had produced a type of obstruction The cyst was dissected from the intestine, tied off and removed The raw surface was covered with peritoneum Closure without drainage

PATHOLOGICAL REPORT

A right ovary about the size of a hen's egg containing multiple small cysts with smooth inner surfaces and filled with clear fluid
Hydrops folliculi

FURTHER DISCUSSION

Overrunning the small intestinal tract means passing the intestine actually through the fingers We recognize a tumor or an inflammatory mass in exploring the abdomen because it is hard If a lesion is soft, like normal intestine, we cannot recognize it by the sense of touch Hence we very rarely find a Meckel's diverticulum in the course of abdominal examination unless it is inflamed To be absolutely sure there was no lesion in the gut the bowel was overrun

The findings, it seems to me, were an adequate cause for her symptoms The cyst by its weight and by its change of position—at one time it was felt in the left pelvis—might easily rotate or kink the intestine In acute intestinal obstruction coming on intermittently we do not find changes in the intestine after a barium meal Unless the meal is given when the intestine is absolutely obstructed the barium goes right by Often the only chance we have of demonstrating acute recurrent obstruction by X-ray is by taking films during the course of obstruction, which may show the intestine distended with gas Occasionally that may give a clue to the part of bowel affected Otherwise no studies that I know can exclude an intermittent intestinal obstruction

She apparently had had many operations and still had an ovary I note also that there was no statement whether the appendix was removed or not I think undoubtedly it had been

My impression is that in operating on a young woman, if we have to sacrifice both tubes and perhaps the uterus, it is much better to save an ovary It continues to function even in the absence of the uterus, and even if it becomes cystic and produces symptoms later it is much better to have another operation in ten or fifteen years than it is to be deprived of that function in early adult life So I would consider this fact that the ovary remains evidence of conservative treatment A long pedicle as a matter of fact is not infrequent, and sometimes we find an ovarian cyst above the pelvic brim in the true abdomen

There undoubtedly was a neurotic factor in this case, and the question is whether she is really relieved of her pain or not I hope the diagnosis of adhesions was made in the hospital record and not told to her That short pain of five or ten minutes associated with turning in bed might be due to readjustment and tension on the scar,—a thing to be noted but not a thing at that time to be attributed to some organic change within the abdomen

DR CABOT You do not feel quite clear, do you, that the intestinal obstruction was the cause of her pain?

DR RICHARDSON I think I do

DR CABOT And that pain that she had three weeks after operation was what?

DR RICHARDSON I think that was due to her scar, which is not infrequently sensitive At times the muscle fibers are held in an abnormal

Urine not remarkable Blood not recorded Icteric index 5

At admission temperature 105°, pulse 102 After October 22 temperature and pulse not remarkable

Except for an attack of pain the night of October 22 the patient was very comfortable in the ward A medical consultant was unable to classify the attack as due to nervousness and could feel nothing in the abdomen The patient refused operation October 26 she was discharged with orders again for a low roughage diet

History of interval After leaving the hospital she felt on the whole better, was less nervous and was able to do her work Late in December she had a sudden onset of sharp right upper quadrant pain with similar but less severe pain in the epigastrium and the left upper quadrant non-radiating, accompanied by nausea and belching, followed by vomiting and relieved only by a hypodermic She had a temperature of 102° and cold sweats She was in bed for seven days with tenderness in the right upper quadrant and weakness Her stools became light brown but not clay colored There was a blotchy eruption of the face and back for several weeks During the next month she had two similar attacks and February 24 a fourth attack, this time with no nausea, vomiting or belching, but with a reappearance of the skin eruption The pain lasted thirty-six hours Then there was some spontaneous relief While it continued she could not lie on her side

Third admission, February 26, four months after her discharge

Clinical examination showed a severe acneiform eruption over the face and back Slight spasm of the upper right rectus muscle with one point of localized tenderness to deep pressure in the right upper quadrant Very slight tenderness in the left lower quadrant Old abdominal scar not tender, no herniae Costovertebral tenderness on both sides, especially on the right Pelvic examination the cervix was caught high up to the abdominal wall

Urine at entrance showed diacetic acid and a slight trace of albumin Sediment 2 leukocytes and 5 red blood corpuscles per field, granular casts Another pre operative specimen negative No bile At admission leukocyte count normal Icteric index 3

A Graham test showed the gall-bladder somewhat larger than usual, otherwise no marked evidence of disease

Before operation temperature normal, pulse 113 to 73, respirations 29 to 20

March 1 operation was done The patient complained a great deal of gas pain after it, but showed no distention March 15 she was discharged considerably improved

April 7, three weeks later, she came to the Out-Patient Department complaining of attacks of sharp knife like pain in the right upper quadrant coming on suddenly without relation to food, time of day, etc., lasting five or ten min

utes, more severe at night, waking her when she turned in bed The area of localization was tender always She had pain in the back of the head and almost continuous backache Examination showed a good scar, slight tenderness over the old scars Otherwise the examination was negative A diagnosis of adhesions was made

DISCUSSION

BY EDWARD P. RICHARDSON, M.D.

There have been several operations within a period of seven years or so, and it is noticeable that all of these operations were for gross pathological change rather than functional change We have therefore a long series of operations for definite disorders followed by indefinite nervous disturbances, perhaps associated with her digestion but not particularly characteristic of this Then as a third thing, possibly separate from her indefinite symptoms, attacks of epigastric pain.

Her past history is not particularly suggestive

On the physical examination the most suggestive thing was spasm in the right lower quadrant and sharply localized tenderness just above this The pelvic examination, I should say, was not more than one might expect to find after her operations

The blood sugar shows that the urine sugar may be disregarded

The icteric index is a little high, and I think that fact should be noted in association with attacks of upper abdominal pain

The Graham test would be against disease of the gall-bladder and would rather contradict the evidence of the slightly increased icteric index

There is no definite evidence of intra abdominal disease in spite of these attacks of epigastric pain, but in view of her numerous and rather indefinite complaints she had the diagnosis of psychoneurosis tacked on to her

Dr. CAROT: Would you make any other diagnosis at this time, on this evidence?

Dr. RICHARDSON: I think I should have reserved diagnosis and sent her out

At her second entry the icteric index is lower than at the time of her last admission

Again we have evidence of some organic trouble in her temperature, and we cannot believe the diagnosis of psychoneurosis is adequate

Apparently at this time, while no positive diagnosis could be made, the impression of psychoneurosis and nervousness was diminishing and the impression of some organic lesion was gaining

At the third admission the icteric index is progressively lower There is still no definite evidence in regard to acute abdominal disease It is obvious that the thing that was most in mind was the possibility of gall-bladder disease—attacks of colic due to stones impacted in the gall-bladder—but it gets no support from the Graham test and none from the icteric index

The New England Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY
under the jurisdiction of the following named committee

For Three Years

JOHN W. BARTOL, MD. FREDERICK T. LOEB, MD.
CHANNING FROTHINGHAM, MD.

For Two Years

HOMER GAGE, MD. Chairman. EDWARD C. STREETER, MD.
EDWARD W. TAYLOR, MD.

For One Year

WILLIAM H. ROBERT, JR., MD. ROBERT B. OSGOOD, MD. ROGER I. LEE, MD.

EDITORIAL STAFF

DAVID L. EDSELL, MD. STEPHEN RUSHMORE, MD.
RED HUNT, MD. HANS ZINSSER, MD.
JOHN P. SUTHERLAND, MD. BENJAMIN WHITE, PH.D.
GERE R. MINOT, MD. HENRY R. VIETA, MD.
FRANK H. LAHRT, MD. ROBERT L. ATE, MD.
SHIELDS WARREN, MD.

WALTER P. BOWERS, MD. Managing Editor

ASSOCIATE EDITORS

GERE G. SMITH, MD. WILLIAM B. BREED, MD.
JOSEPH GARLAND, MD.

THE NEW HAMPSHIRE MEDICAL SOCIETY

PUBLICATION COMMITTEE

D. E. SULLIVAN, MD. EMERY M. FITCH, MD.
JOSEPH J. COBB, MD.

THE VERMONT STATE MEDICAL SOCIETY

PUBLICATION COMMITTEE

WILLIAM G. RICKER, MD. C. F. DUTTON, MD.
J. A. WART, MD.

SUBSCRIPTION TERMS \$6.00 per year in advance, postage paid
for the United States. Canada \$7.05 per year. \$7.50 per year
for all foreign countries belonging to the Postal Union.

Material for early publication should be received not later
than noon on Saturday. Orders for reprints must be sent to
the Journal office, 126 Massachusetts Avenue.

The Journal does not hold itself responsible for statements
made by any contributor.

Communications should be addressed to The New England
Journal of Medicine, 126 Massachusetts Avenue, Boston, Mass.

POST-TRAUMATIC HEADACHE

THE symptoms of headache and dizziness commonly follow head trauma, but they usually disappear within a month or six weeks after the accident, especially if the patient has had sufficient rest in bed. Occasionally these annoying symptoms persist and patients with complaints of headache and dizziness are rather unwelcome visitors in most hospital clinics. They appear, moreover, in considerable numbers before the Industrial Accident Board seeking a continuation of their compensation and a diagnosis, usually unmerited, of traumatic neurosis often appears on their records.

In the last few years at least one type of this group of patients has undergone careful analysis and a specific form of treatment has been suggested. Dr. Wilder Penfield of the Presbyterian Hospital, New York, first began to treat patients with chronic meningeal headache by lumbar air insufflation in 1922¹. He was led to using this method by the report of Wartenberg²,

who had found that air injected into the lumbar subarachnoid space would pass upwards and either accumulate in the sulci and in a thin layer over the convexities of the cerebral hemispheres, or pass into the ventricles. In some cases it appeared definitely in both places by roentgenographic examination of the skull. This method, now called pneumorachocentesis, has been used extensively in Germany and in this country as a diagnostic measure. Dr. Penfield found, moreover, that in certain of his patients with chronic meningeal headache the air given by lumbar insufflation collected in a more or less definite "pocket" at the site of the meningeal adhesions which so commonly follow localized trauma of the skull. Single, or sometimes repeated, air injections have in some cases cured the patients of their localized headaches. He has found that this method of treatment is of most use in patients whose headache is distinctly localized. In most of his patients the headache was frontal, but its localization depended usually on the site of the trauma. The character of the headache was dull and the pain was made worse by lifting, blowing the nose or stooping over. Vertigo was almost always present from the start. He found no physical signs typical of meningeal headache. Two patients showed some evidence of brain injury received at the time of the accident but the diagnosis was usually made on the basis of the absence of abnormal physical signs when there was a history of localized, dull hammering head pain, associated with transient attacks of vertigo, all dating from a head injury. Dr. Penfield has treated seven patients whose ages varied from four to sixty-five years. The duration of the symptoms was from four weeks to eight years. In only three of the seven could fracture be proved. In three the site of the headache corresponded to the site of the blow. The amount of air injected varied from 42 to 95 c.c. The immediate reactionary headache lasted from three to nine days after insufflation. "Pneumograms" taken after the air injection showed a cyst of the pia arachnoid in three cases.

The report shows that there was a striking similarity in the patients' complaints, which Dr. Penfield feels justifies in describing as a syndrome. The uniform relief which lumbar air insufflation afforded all the patients thus treated by him testified to the specificity of the treatment. There are certain dangers connected with the insufflation of air, which have been already pointed out by Dr. Penfield's previous work³. The method is much simpler than intraventricular injections of air and should find a place in the treatment of these chronic conditions.

REFERENCES

1. Penfield, Wilder. Chronic Meningeal (Post-traumatic) Headache and Its Specific Treatment by Lumbar Air Insufflation. *Encephalography, Surg. Gyn. and Obs.* 45: 47-192.
2. Wartenberg, R. Beitrag zur Encephalographie und Myelographie. *Arch. f. Psychiat. u. Neurol.* 50: 196.
3. Penfield, Wilder. Cerebral Pneumography: Its Dangers and Uses. *Arch. Neurol. and Psychiat.* 13: 550-192.

situation and after discharge from the hospital there is a process of readjustment

LATER NOTES ON THE HISTORY

June 16, four months after her third discharge, the patient reported that she had had no abdominal pain since the last operation and felt well in that respect. For two weeks she had had some backache across the lumbar region shooting down the legs. Examination showed the scars in good condition, abdomen and pelvis in good position, no herniae. Motion was limited on forward bending. It was a question whether the backache was due to sacro iliac disease or to an abdominal condition.

FURTHER DISCUSSION

DR RICHARDSON She is apparently relieved of these acute attacks of pain, although the duration of observation was not very long.

It seems to me that her attacks of pain were explained by this rather unusual type of recurrent intestinal obstruction.

DR CABOT You spoke of the high temperature as making it clear that she was not psychoneurotic. Of course there are explanations that would make that perfectly consistent with psychoneurosis, aren't there?

DR RICHARDSON Yes, there are. But if she produced a high temperature once she would be likely to do it again.

DR CABOT Why didn't her gall-bladder show up any more?

DR HOLMES Perhaps it is not a good light. I rather think that the man who took it was right and my interpretation wrong, either because I have not got the right plates or the right light. I think we probably ought to take more plates of these acute conditions. If we had had an X-ray of her when she first came in it would very probably have shown gas in the small intestine and gas in that part of the bowel, particularly if there is distention with it, is pretty good evidence of obstruction.

DIAGNOSIS, FIRST ADMISSION

Constipation
Abdominal adhesions
Psychoneurosis

DIAGNOSIS, SECOND ADMISSION

Cholecystitis?
Psychoneurosis
Subacute intestinal obstruction?

DIAGNOSIS, THIRD ADMISSION

Cyst (hydrops folliculi) of the right ovary
Intestinal obstruction

CHILD DIED AFTER NEGLECT

A flagrant case of parental neglect is indicated by the information on a diphtheria death record recently received in the office of the Connecticut State Department of Health. A little girl aged four became ill November 20, 1927. A physician was not called until November 24 or four days after the beginning of illness. Noting the condition of the child the physician advised hospital care or the administration of diphtheria antitoxin at home. The parents refused both methods of treatment and discharged the doctor.

A few days later on November 26, another physician was called. He likewise advised antitoxin but was discharged. A culture which he took proved positive for diphtheria bacilli.

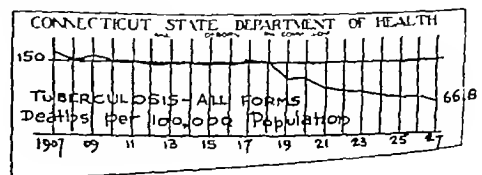
December 2, or twelve days after the onset of illness still a third physician was called. He succeeded in getting the parents' consent to administer antitoxin.

But the end was not yet. This patient had been making a valiant fight against the poison of the diphtheria bacillus for twelve days before she had any help from antitoxin. This poison had so affected the child's body that paralysis of the throat developed after recovery from the acute illness. On January 6 a fourth doctor was called on account of this paralysis. He sent the child to a hospital. The next day the parents took the child away from the hospital against advice. On January 11, the child died with no physician in attendance.

The death certificate in this case shows death from post diphtheritic paralysis. Antitoxin given early enough would have saved the child's life. In fact it seems certain that the patient would have recovered and remained well had antitoxin been given at the time the first doctor was called or even when the second doctor was called, in spite of the delay in calling a doctor by the parents. Whether or not remaining in the hospital after paralysis set in might have saved the child's life is not so certain. In any event while the death certificate shows post-diphtheritic paralysis as the cause of death it is hard to escape the conviction that the child actually died from parental neglect.

TUBERCULOSIS DEATHS 1907-1927

In the chart below is shown the reduction in tuberculosis deaths per 100,000 population in Connecticut from 1907 to 1927.



and Surgeons of Glasgow, Glasgow Hospitals of a Century ago, Recollections of Glasgow and its University,—these reminiscences of a century of Glasgow medicine serve to build up an atmosphere which reminds us in New England of the aura which attends the past history of the Massachusetts General and the Harvard Medical School.

Sir Dawson Williams late Editor of the *British Medical Journal* contributed a note on *Medicina Curiosa, An Early Medical Journal* Sir Squire Spriggs, Editor of the *Lancet*, writes on Medical Journalism, David Rome Co-editor of *The Caledonian Medical Journal* comments in charming fashion on the passing years Other articles deal with other phases of medicine past and present

The Centenary Number of the *Glasgow Medical Journal* gives the reader a warm personal feeling as if he had been admitted into the intimacies of the family circle The NEW ENGLAND JOURNAL OF MEDICINE offers its sincere congratulations, and hopes to be present when the *Glasgow Medical Journal* celebrates the fulfillment of its second hundred years

THE TYPHOID CARRIER

It has been recognized that the problem of the typhoid carrier often centers in the gall bladder and that excision of this reservoir may remove this source of infection

Massachusetts is believed to be the first State to endorse this procedure and prove its efficacy in paying the charges incident to the operation on the person of one John Mentzer This operation was done at the Clinton Hospital The operation has been done in other places but the first demonstration by a state of the absence of typhoid bacilli in the feces over a sufficiently long period to warrant the belief of a cure seems to justify the claim of priority for Massachusetts

Mentzer is to be commended for his co-operation with the state for he was not ill and was unconscious of being a menace to others until investigation demonstrated that he was the host of the bacillus typhosus

He was the source of a considerable epidemic of typhoid fever He has now been relieved of the restrictions imposed with reference to handling food products

The further prosecution of the plan to have the state pay for the surgical treatment of typhoid carriers presents complications

In the first place carriers who are not ill may object and second the expense will be very great

There are many typhoid carriers in Massachusetts Sixty-one are known and there may be according to the suspicions of the State Department of Health at least two thousand.

With these potential sources of infection, typhoid fever cannot be regarded as a vanishing disease It will continue to vex health officials, impose heavy financial burdens and may cause death

Sanitary science can deal efficiently with polluted water supplies but the typhoid carrier is an individual problem, its greatness depends on numbers and the disposition of individuals The plans of the State Department of Public Health will be noted with interest

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

WHITE, PAUL D A B M D Harvard Medical School. 1911 Associate Physician Massachusetts General Hospital, Instructor in Medicine Harvard Medical School His subject is "Clinical Cardiovascular Observations" Page 325 Address Massachusetts General Hospital, Boston

CODMAN E A. A.B, M D Harvard Medical School 1895 F.A.C.S Member of the Committee on the Registry of Bone Sarcoma of the American College of Surgeons, Formerly Chairman of the Committee on the Standardization of Hospitals Clinical Congress of Surgeons His subject is "The Application of Pathology to Surgical Problems" Page 330 Address 227 Beacon Street, Boston

ALLISON NATHANIEL M D Harvard Medical School 1901 F.A.C.S Chief of Orthopedic Service Massachusetts General Hospital, Professor Orthopedic Surgery, Harvard Medical School His subject is "Heliotherapy in Surgical Tuberculosis" Page 332 Address 234 Marlborough Street Boston

HAWES JOHN B 2nd A B M D Harvard Medical School. 1903 President Boston Tuberculosis Association, Consultant for Diseases of Lungs U S Veterans' Bureau Dist No 1 His subject is "Suspecting Tuberculosis" Page 336 Address 11 Marlborough Street, Boston

BROOKS HARLOW M D University of Michigan Medical School 1895 F.A.C.P Visiting Physician City Hospital, Consulting Physician at the French Fifth Ave Polyclinic, Union, Joint Diseases Beth Israel Hospitals New York City Consulting Physician at the Mt Vernon, Greenwich, St Johns, St Josephs (Yonkers), Southside (Long Island), Beth Israel (Newark) Hospitals, Professor of Clinical Medicine, New York University His subject is "The Selection of Cases for Medical or Surgical Treatment in Gastric and Duodenal Ulcer" Page 339 Address 47 W 9th St, N Y City

ERDMANN, JOHN F M D Bellevue Hospital Medical College 1887 F.A.C.S Director of Surgery and Visiting Surgeon, The New York Post Graduate Hospital, Professor of Surgery, New York Post-Graduate Hospital and Medical School, Consulting Surgeon at the Bellevue Hospital (Gouverneur Branch), Greenwich Hospi-

HOSPITAL RESPONSIBILITIES

THE larger teaching hospitals in the great cities must in addition to the main function of healing the sick devote attention to the advancement of medical knowledge and the training of medical students. The large hospitals not connected with medical schools are relieved of much responsibility in regard to medical classes. They must, however, train house officers and residents. They may or may not devote special attention to laboratory research. The smaller hospitals are often handicapped by the lack of house officers. All of the work must be done by technicians, nurses, attendants or the visiting staff. Thus the duties of the hospital staff vary greatly in different hospitals. The duties of the Trustees vary likewise.

But in certain respects the duties of Staff and Trustees are the same in the largest and the smallest hospital. They must do all in their power to give the best possible service to the patients committed to their care, they must do all that they can to advance medical knowledge, and they must do all that they can to make their hospital an active factor in the community for the diffusion of medical knowledge and the promotion of health.

The time has passed when the functions of the Trustees of any hospital are fulfilled by securing a balanced financial account.

The Trustees of hospitals must recognize that adequate laboratory equipment and service are essential today for the proper care of the patients. The JOURNAL will refer especially to laboratory service in association with the Boards of health or other organizations or the physicians of the community in a future number. But the duties of the Trustees do not end here. The importance of autopsies is one matter which the Trustees must recognize. Autopsies may do much to broaden the scope of medical knowledge. This is fully as true in the small as in the large hospital. New facts are learned by the association of carefully and accurately observed clinical data with post-mortem findings. Not only may our knowledge be advanced in this manner but from the view point of Trustees anxious to increase the efficiency of their institution there is nothing which makes for greater care on the part of the physician or surgeon than the certainty that in case of death his work is to be reviewed and checked. Furthermore in the matter of autopsies it is the duty of the Trustees of hospitals to aid in dispelling the rapidly diminishing opposition on the part of certain of the public to these examinations.

Laboratory service, pathological examinations and autopsies all cost money. But the money expended is well invested. Adequate salaries to pathologists has been discussed by Dr. E. A. Codman which appears on page 330 of this issue of the JOURNAL. Every community is entitled to adequate service of this sort. It can well be secured under the leadership of the hospital in

each community. The public never can be expected to support liberally any institution not believed to be doing its full duty to its patients and to the community. There is not the slightest doubt about the willingness of any community to support the Trustees of any hospital who in co-operation with their staff abandon the passive attitude now so common and actively seek to render their work broader and better than ever before. Our hospitals must assume aggressive leadership in advancing medical knowledge and promoting health.

CONGRATULATIONS TO A
CONTEMPORARY

FEBRUARY, 1828, the month that witnessed the first issue of the *Boston Medical and Surgical Journal*, witnessed also the first appearance of the *Glasgow Medical Journal*. One hundred years later, both periodicals issued their centenary numbers. Aside from this coincidence in chronology there are other points of similarity, due no doubt to the general factors which influenced the development of medical journals.

The *Glasgow Medical Journal* apparently owed its origin to the energy and ambition of William Mackenzie, a surgeon and ophthalmologist of Glasgow, who, with the backing of some three hundred subscribers, produced a highly creditable publication. Mackenzie occupied the editorial chair for less than two years, he was succeeded by William Weir, who continued as editor until October 1833. During these years the *Journal* was issued as a quarterly. In October, 1833, it apparently died, but was resuscitated, again as a quarterly, in April, 1853. In this form it continued to appear until 1866, in the two years following it was issued every month. In 1868 the *Journal* was in a bad way, there was "a sameness and heaviness in the articles and an absence of leading articles dealing with current, that is controversial, medical topics." A meeting of the medical profession of Glasgow was summoned "to consider the present position and prospects of the *Glasgow Medical Journal*." An association, known as the Glasgow and West of Scotland Medical Association, was formed to carry on the *Journal*, and under its auspices the *Journal* has continued a "steady, more or less healthful existence." Since January 1878, it has been issued monthly.

The Centenary Number of the *Glasgow Medical Journal* is delightful. It contains an account of the chief events in the history of the publication, with brief biographical sketches of the many notable men who were its editors. The excellent likenesses of many of these men published in this number of the *Glasgow Medical Journal*, tell better than words what sort of men they were.

There are short accounts of the institutions of Glasgow in connection with which the *Medical Journal* developed. The Medical School of Glasgow University, the Royal Faculty of Physicians

parts This possibility is best safeguarded against by rest Elevation of the leg is helpful, and immobilizing as much as possible by bandaging or by pillow and side splints is always advantageous Pain may be relieved by morphine, codeine, etc., but usually only in the acute stage is morphine necessary Painting the leg with ichthvol may relieve the pain in many cases as may also applications of a lead and opium solution The leg should never be massaged because of the probability of favoring embolism And for the same reason, stimulating drugs should not be given The condition may last for a few days, or may persist for months In some cases the oedema resulting from the thrombo-phlebitis may persist for years, and occasionally for an entire lifetime The patient should not be allowed out of bed for at least ten days after the temperature has become normal, and then should be very careful as to the movement of the affected leg After getting out of bed, if there is a tendency toward oedema, flannel or Bender bandages or properly fitted elastic web stockings may be indicated

Questions of a similar nature to the above will be discussed in the JOURNAL each week They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology

BOSTON MEDICAL LIBRARY

THE term "high blood pressure" has been so often used apart from its context that it is being bandied about now as if it were an entity and the "village gossip" uses the term as glibly as if she were describing the weather, generally with a lift of the eyebrows indicative of superior intelligence and the obvious intent to prepare the listener for the worst It was refreshing therefore to hear Sir Humphrey Rolleston discuss the subject of its true significance Were the present tendency to popularize the symptom to continue it would not be long before every housewife would want some sort of an apparatus for taking pressures, a habit which would be even more banal than that of possessing a clinical thermometer The truth of the matter seems to centre about two or three points In the first place high blood pressure is of consequence largely because it reflects certain underlying conditions which may be serious, of and by themselves In the second place many people are "set" for a pressure which runs higher or lower than the average and for them that pressure is the norm In the third place it is probable that certain pressures which, for the individual, are well above the normal are adaptations designed to meet pathological conditions in organs of the body whose function is concerned with the elaboration from the blood stream of

certain elements of metabolic waste This was pointed out many years ago by Cohnheim

Viewed in these lights there should be less confusion as to the importance of this clinical phenomenon and it might be robbed, in those instances where it is justifiable, of much of its sinister significance The important bibliography of this subject, arranged so far as possible with these points in mind, will be exhibited in Holmes Hall during the week of April 9th

There was on exhibition in Holmes Hall a fortnight ago a collection of books on the subject of Rabies These were chiefly of historic interest for they represented the knowledge of this disease possessed for the most part before the time of Pasteur There were many of them of interest also, because they reflected the storm of opposition that so frequently greets any radical innovations in the treatment of disease just as is often the case in other of the arts Many of the works of great musical composers, for example, which are now firmly established as classics, were at first hissed off the stage and their authors ridiculed

Pasteur's contribution to the treatment of Rabies was no exception and even now there are vestiges of the same unreasoning opposition cropping out from time to time The following early bibliography on this subject is given to point out the difficulties any pioneer may expect to meet who ventures to give the world something new, no matter how good reason he may have for the faith that is in him

EARLY LITERATURE ON RABIES

- 1 Andrea J 19 F 360 (1753) Epilepsy, and Mad dog bite Method of cure
- 2 Andry 11 R.5 (1774) Recherches sur la rage
- 3 Arnold, T 11 r 35 (1793) Report of case with successful treatment
- 4 Bardsley S A. 7 622 (1807) Report (Case) experiments fr Hospital practice
- 5 Berkenhont, J 11 R (1783) Claims for infallible treatment discussed
- 6 Billings F S 11 R. (1886) 14 dogs with Pasteur
- 7 Blatchford T W 11 R.16 (1856) Report of Sp Com of A. M A. to study hydrophobia
- 8 Bloodgood J C 6G 422 (1911) Hydrophobia.
- 9 Bonley H. M 11 R. (1874) Discussion at the Sorbonne of cure and prevention.
- 10 Clark, J H. 11 R 28 M Pasteur and Hydrophobia
- 11 Dolan T M 11 R 37 (1890) Pasteur and Rabies
- 12 Dulles C W 11 R. (1894) Treatment of Hydrophobia.
- 13 Ernst, H C 11 R (1887) Experimental research on Rabies
- 14 Local Gov't Board fol. 11 R. Report of Com of Local Gov't Bd to Report on Pasteur treatment.
- 15 Hart, G H 11 R (1908) Rabies and its increasing prevalence
- 16 Harvey W F 11 R. 3 (1907) Theory and Practice of antirabic immunization.
- 17 Keirle N Y 11 R. 24 (1909) Studies in Rabies
- 18 Medical Press Rep 11 R 23 (1878) Report of Special Com of Med Press and Circ

tal, Mt Vernon Hospital, N Y State, New York Hospital, N Y State Hospital for Insane His subject is "The Surgical Consideration of Ulcer of the Duodenum and Stomach" Page 344 Address 60 W 52 St, N Y City

FITCH, EMERY M M D Dartmouth Medical School, 1905 F A C S Surgeon Claremont General Hospital His subject is "Appendicitis in People Over Fifty Years of Age" Page 348 Address Claremont, New Hampshire

CLOW, FRED E M D Harvard Medical School, 1904 Visiting Physician, Huggins Hospital, Medical Director, Brewster Free Academy His subject is "After Effects of Toxemia of Pregnancy" Page 351 Address Brown House, Wolfeboro, N H

The Massachusetts Medical Society

ULTRA VIOLET LAMPS

A REQUEST

THE Committee on Public Health of the Massachusetts Medical Society is still continuing its efforts to contribute to a better understanding of the usefulness of so-called "ultra violet lamps" In the responses to the Committee's questionnaires a year ago there was a note of caution especially on the part of physicians of wider experience with the therapeutic use of various forms of radiation Specific references to unfavorable results from exposure to lamps were also given These were summarized in the Committee's report appearing in the JOURNAL of June 30, 1927 (page 1081)

The Committee believes that further information of this sort can be utilized to serve a useful purpose and it would be helpful to the work of the Committee if any reader of the JOURNAL who, notwithstanding customary precautions, has had unfavorable, harmful or unexpected results, immediate or remote, from exposure to "ultra violet lamps" or in connection with helio-therapy, would write to the Secretary of the Committee, Dr Francis George Curtis, City Hall, West Newton, Mass, giving such information regarding the case or cases as may be made of practical value for the guidance of others

VICTOR SAFFORD, M D,

Chairman, Committee on Public Health

THE TREASURERS REPORT

The Treasurer of the Massachusetts Medical Society makes the following report regarding the dividend distribution made March 24

The Council of the Society voted to distribute the sum of \$4000 to the district societies this year The total number of payments received in time to count for the dividend computation was 3506 making the dividend per each paid member \$1140901

The following table gives the number of payments in each district and the dividend

DIVIDEND FIGURING, MARCH, 1928

Total Reported, 3506		
Total, \$4000—per member, \$1140901		
District	Number Reported	Check
	Paid	
Barnstable	31	\$ 35 36
Berkshire	89	101.54
Bristol North	58	66.17
Bristol South	174	198.51
Essex North	152	173.41
Essex South	165	188.24
Franklin	30	34.30
Hampden	242	276.09
Hampshire	56	63.89
Middlesex East	80	91.27
Middlesex North	95	108.38
Middlesex South	589	671.99
Norfolk	530	604.67
Norfolk South	82	93.55
Plymouth	90	102.68
Suffolk	672	766.68
Worcester	303	345.69
Worcester North	68	77.58
	3506	\$4000 00
Non Resident	207	

Total paid 3713

Total active membership - 4294

The total Massachusetts Membership of the Society is 4107 Deducting the 108 retired members leaves 3999 This shows that 493 members residing in Massachusetts and 83 non residents had not paid March 1 1928

In 1927 the membership was 3911 There were 676 Massachusetts members and 69 non resident members who had not paid before March 1 1927

A K STONE, Treasurer

SECTION OF OBSTETRICS AND GYNECOLOGY

Foster S Kellogg, M D Frederick L Good, M D
Chairman Secretary
Frederick J Lynch M D Clerk

What is the Treatment of Phlebitis?

Whether this condition is met with as a complication of the Puerperium or secondary to a pelvic operation, it must be considered in the majority of cases as a manifestation of Septic (rarely it may be due to purely mechanical factors) Consequently the question of prophylaxis cannot be stressed too strongly—perfect asepsis during a delivery whether normal or operative, and perfect asepsis and technique during pelvic operations In pelvic operative cases the fact is well established that one is more apt to see phlebitis when there has been considerable trauma—freeing of adhesions etc,—and when there have been numerous tabs "of bruised tissue left in ties, etc" When actually confronted with the condition the treatment is principally rest in bed, and in a horizontal position

We must not lose sight of the omnipresent possibility of an embolus or emboli to other

scription for copies of the B M L Book-list
Subscription price \$5 00 per year

MISCELLANY

MEMBERSHIP DRIVE OF THE NORFOLK COUNTY HEALTH ASSOCIATION

This movement is approved by the Norfolk County Health Authorities according to Dr N R Pillsbury. The especial responsibility of the county according to Dr Pillsbury lies in the tuberculosis problem which is found in the large number of cases and the record of deaths from tuberculosis during the year

WHEN INFANTILE PARALYSIS IS EPIDEMIC

Dr Charles H. Mayo is quoted by the Children's Bureau as saying that it is futile to attempt to run away from infantile paralysis after the epidemic begins because recent experiments have shown that at such a time the germs of the disease exist in the throats of almost all children and of many adults, most of whom never show any signs of the sickness. The best thing to do he says, is to remain at home, guard the children against overfatigue and indiscretions of diet, give them a little extra rest during the day, and watch their temperature

APRIL TUBERCULOSIS ABSTRACTS

During March, 1928, a nation wide campaign of education to impress on the public the importance of early diagnosis of tuberculosis was launched. Thousands of talks were given and motion pictures were shown in many places. Newspapers and magazines contributed many columns on the subject. Eight thousand billboards and 500 000 smaller posters carried the message, and about 10 million pieces of printed matter were prepared for free distribution.

In connection with the campaign numerous articles on the early diagnosis of tuberculosis appeared in national, State and local medical journals. While each of these articles reflects the individuality of the writer nevertheless it is evident that opinion is almost unanimous concerning the important features of early tuberculosis. Only a few brief gleanings are here presented.

FAMILY HISTORY—Opie emphasizes that close contact, such as occurs in the family is an important item in the history. Children and adults in families of which some member is tuberculous with sputum containing bacilli are usually infected with tuberculosis and the infections are often severe. Henry believes that well-defined contact, especially in childhood is a good basis for suspecting tuberculosis. The ideal contact is a baby associating with the mother.

FATIGUE—Haices lays stress on the constitutional symptoms most important of which are chronic fatigue undue fatigue ease of tire and loss of strength. Miller states that loss of strength is the most outstanding symptom of active pulmonary tuberculosis. Homan says fatigue is one of the earliest and most important symptoms.

HEMOPTYSIS—All writers appreciate the significance of hemoptysis. Bray classes it as the most sug-

gestive of the local symptoms. The amount of expectorated blood varies from a few drams to several ounces. Copious hemorrhages speak for the more advanced stages. A small amount of blood must be interpreted cautiously because of the difficulty in determining its origin. 'A physician who fails to realize the significance of hemoptysis, says Minor is playing with life.'

GASTRIC SYMPTOMS—Anorexia nausea and other functional gastro-intestinal derangements states Bray are not uncommon. They may be the first manifestations and present throughout the course of the disease.

COUGH—Homan believes that any cough which persists for more than two or three weeks usually means something more serious than an ordinary cold or bronchitis and should call for careful consideration. Miller states any cough that persists for one month or longer should be thoroughly investigated as to the possibility of its being tuberculous in origin. While this is a symptom and complaint common to all respiratory infectious it is particularly so in cases of tuberculosis characterized by a catarrhal outset.

PLEURISY—A history of pleurisy with effusion should always arouse suspicion. It may be agonizing but more often it is dull-aching in character. It is unilateral and for the most part confined to the base. According to Homan 90% of pleurisies are of tuberculous origin.

TEMPERATURE—Afternoon or evening temperature of 99° or over needs explanation says Webb and the temperature should be studied for at least a week with the patient in bed. One or two readings in the office are not reliable. Seican adds when there is a periodic afternoon rise in mouth temperature of one-half degree increased after exercise the evidence for tuberculous infection is strengthened. Sub-normal temperature points in the same direction (as elevation) if to a different phase.

RALES—All writers agree that the auscultatory findings are most important. Otis places his main reliance upon the findings of persistent fine rales at the apex. They are definitely abnormal and almost pathognomonic of tuberculosis though not always of active cases. He quotes McKenzie's dictum,

The earliest physical sign which is really characteristic is the presence of rales. Rales heard at the base are rarely significant. Miller is perhaps most emphatic when he says. The presence of persistently moderate coarse rales in fact any type of rales localized in the upper lobe above the third rib warrants a diagnosis of pulmonary tuberculosis. Webb describes the technique of eliciting rales as follows.

The patient should be instructed to breathe in through the mouth then to breathe out and to give a slight cough with the last part of the outgoing breath. Rales are heard in showers and usually occur after the cough at the time the breath is inspired.

XRAY—The Xray helps to confirm the lesions found by physical examination. Seican says a complete Xray of the chest is indispensable as an objective aid to diagnosis and that its interpretation needs the clinician. Myers regards the single flat film as of slight help and recommends the wider use of stereoscopic films. The roentgenologist, he adds should become familiar with the modern technique. McPhedran points out that in flat films

- 19 Open Letter 11 R. 20 (1896) Open letter to Editors on Hydrophobia as a simulated disease
- 20 Pasteur, L 1 J 60 Rabies
- 21 Reder, A. 23 A 177 (1879) Die Hundsmuth, Lyssa, Rabies confina.
- 22 Stimson, A. m (1912) Rabies in N S during 1911
- 23 Vansantvoorde, F.A.G (1813) 4 11 R. Essai Chirurgical
- 24 Dulles, C W 11 R (1894) Hydrophobia in N S Statistics
- 25 Frothingham, L 11.R (1906) Rapid diagnosis of Rabies
- 26 Dujardin Beaumetz 32 B 39 No 5 1889 Rabies in Dept. of the Seine in 1888
- 27 Dujardin Beaumetz 11.Ah.4 No 5 1884 Rabies in Dept. of Seine 1881 2 3
- 28 Dujardin Beaumetz 11 32 B 39 No 6 Rabies in Dept. of the Seine 1889
- 29 Dujardin Beaumetz 11 32 B 43 No 9 10 Rabies in Dept. of the Seine 1892
- 30 Dujardin Beaumetz 11 32 B 41 No 11 Rabies in Dept. of the Seine 1881 1891
- 31 Horsley, V A.J 2B 45 Mr H's Experiments with the virus of Rabies
- 32 Lutand, A J 11 R.27 1887 Lecture in London on Hydrophobia in regard to Pasteur's method

AN AMENDMENT TO THE CHARTER OF THE BOSTON MEDICAL LIBRARY

By the provisions of House Bill No 941 which has now become Chapter 118 of the Acts of 1928, the terms of the original Charter of the Library have been extended so that the purpose for which the Corporation is constituted now reads "to establish and maintain a Library of Medicine and for the promotion of Medical Science and Medical Education" The text of the Amending act reads as follows

An Act enlarging the Purposes of the Boston Medical Library

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows

Boston Medical Library, a corporation established on May seventh, eighteen hundred and seventy-seven, under general law under the name of Boston Medical Library Association, and the title of which was changed to its present title under the provisions of chapter three hundred and sixty of the acts of eighteen hundred and ninety-one on May fourth, eighteen hundred and ninety-six, shall have, so far as the same may be additional to its present purposes, the following purposes, to wit—promoting and advancing medical science and medical education

This extension was asked for in the hope that enlarged power would bring increased usefulness to the institution As a repository of books, with consulting and circulating privileges it has well maintained the traditions of its founders and has continued to fulfill in an efficient manner the obvious functions which they had in mind at the time of its organization over fifty years ago

It stands today the fourth in size and importance amongst the Medical Libraries of the

United States, and from this dignified and honorable position it is not likely to recede, but, in following the lead of similar institutions elsewhere it is anxious to offer additional facilities and services, both within and without the medical ranks

The future finds itself intimately tied up with a present insistent demand for enlarged quarters Accumulating books have long since overflowed an inadequate shelf room, and still the continuous purchase policy must be preserved in order to meet a justifiable demand for what is good and new in the literature

In an earnest endeavor to evolve satisfactory plans for development the Library relies upon the indulgence and help of its friends

In connection with a new function of the Library the following circular has been sent to other libraries

A CIRCULAR TO SMALLER LIBRARIES

Boston, February 29, 1928

To the Librarian

The Boston Medical Library is contemplating the publication of a monthly list of new medical books in which the new books and new editions will be listed as issued by the publisher, and *Subject Headings and B M L and Dewey Classification Numbers* will be assigned to each work Short concise reviews will be given of works available and considered worthy of notice Books considered suitable and necessary for the small library will be so designated

At first the American and British works will be listed but gradually the best of the French and German and other foreign books will be added to the list

Not less than ten numbers will be issued during a calendar year and the subscription price has been fixed at the nominal figure of five dollars a year which is about the cost of publication The subject headings and class entries as assigned by an expert classifier are worth the subscription price to any librarian or cataloger Much of the difficult part of cataloging should be eliminated by these entries The publication of the list will depend on the support accorded the venture by medical librarians and other interested persons It is hoped to issue the first number in April If you are interested, sign the attached subscription blank and send by return mail. Do it now! On your reply depends the success of the undertaking Unless a sufficient number of subscriptions are promptly received the project will have to be abandoned

Yours very truly,

JAMES F BALLARD

8 The Fenway

Boston, Mass

To the Boston Medical Library

8 The Fenway, Boston, Mass

You are hereby authorized to enter our sub-

BELIEF FOR EMERGENCY OFFICERS

After some debate, the Senate on March 15th passed the bill, S 777, to retire emergency officers of the Army Navy and Marine Corps who incurred physical disability during the World War. Such persons with not less than 30 per cent disability would be placed on the retired list and awarded 75 per cent of the pay to which they were entitled when discharged. Many medical officers from New England are affected by this measure. It will cost the government nearly five million dollars to retire the more than 3000 former officers involved in this legislation.

SERVICE OF MEDICAL OFFICERS

Another bill applicable to medical officers is H R 11981 which would allow officers of the Army Medical Department to include active duty performed as a member of the Medical Reserve Corps or as a contract surgeon in computing length of service for purposes of retirement.

THE PRESIDENT'S PHYSICIAN

The personal physician of the President, who is a major in the Army Medical Corps, is a little nearer to being a colonel as the Committee on Military Affairs of the House has favorably reported the bill to this effect. Several attempts to bring the matter to a vote in the House under the unanimous consent rule have been frustrated by objections.

The naval officer assigned to duty as physician to the President is also favored by a bill introduced in the Senate by Mr. Reed of Pennsylvania as S 3584. He would become a captain in the navy. The present incumbent a distinguished soldier who wears the Medal Honor for gallantry in action with the Marines is Lieutenant Commander Joel T. Boone.

RECOGNITION FOR HEALTH HEROES

The survivors of the famous yellow fever experiment in Cuba and the surviving wives of those who have passed on would get special recognition by being placed on the rolls of the War Department according to bills prepared by the American Association of Medical Progress and introduced in the Senate by Dr. Copeland and in the House by Mr. Wainwright of New York, a former assistant secretary of war.

A bill to change the name of the Ancon Hospital in the Canal Zone to the Gorgas Hospital was adopted in the House on March 5th. A monument to General Gorgas in the City of Washington is provided for in a bill introduced in the Senate by the well known Mr. Heflin. It would cost \$50,000.

MEDICAL PRACTICE IN THE DISTRICT OF COLUMBIA

Hearings on a bill to regulate the practice of the healing art in the District of Columbia were recently held by a subcommittee of the Senate of which Dr. Copeland is chairman. The chiropractors appeared in force and insisted that they be given a separate examining board, a plea supported by Senator Capper. Senator Copeland said that he was willing and one spokesman for the cuttists had agreed to the basic science examination but the meeting came to an impasse over a definition for chiropractic the local medical profession properly refusing to stand for that proposed.

Another bill introduced by Senator Copeland, S 3592 provides that the degrees of doctor of medicine and doctor of osteopathy shall be accorded the same rights and privileges under governmental regulations.

A FEDERAL CANCER INVESTIGATION

A thorough investigation of the ways and means whereby the federal government may aid in discovering a successful cure for cancer would be made by the National Academy of Sciences and a report rendered to Congress according to the terms of a bill S 3554 introduced in the Senate by Mr. Neely. For this purpose an appropriation of \$100,000 would be authorized.

ANTI VIVISECTION

The ubiquitous anti vivisection bill said to have been inspired by interests in New England, has made its customary appearance in Congress this time as H R 11998. This measure would make it a misdemeanor for any person to operate or experiment on a living dog in the District of Columbia or any Territory except for the purpose of healing or curing the dog.

OLEOMARGARINE

Several bills dealing with oleomargarine have recently been introduced in Congress. Thus H R 11848 would place a tax of ten cents a pound on this product when colored in any manner. The reason for this measure is said to be because of present practices in using yellow fat in old cattle to make some makes of oleomargarine resemble butter in appearance. Another bill H R 12246 would forbid any money appropriated for the support of any ward or employee of the government to be expended to purchase oleomargarine filled milk, or other alleged substitutes for butter. A third bill S 3737 would likewise impose taxes on oleomargarine made to look like butter.

MASSACHUSETTS LEGISLATIVE NOTES

House 748 the bill to modify the two year limit within which malpractice suits may be initiated has been definitely killed by the vote of the Senate on March 14 granting leave to withdraw.

House 1105 has been substituted by the Committee on Education for House 148 which embodied the recommendations of the Commissioner of Education. The new bill provides that every person in control of a deaf child between seven and eighteen shall cause such child to attend some suitable school approved by the department where the deaf are taught speech and speech reading provided that this section shall not apply to such a child whose mental condition or whose physical condition in other respects than deafness is such as to render such attendance inexpedient or impractical or who is being given private instruction approved by the department during the time the public schools are in session.

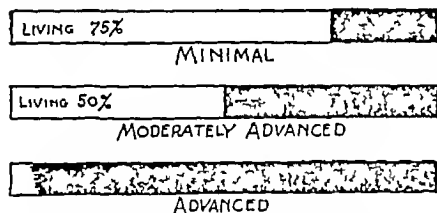
Senate 262 has been substituted by the Senate for the report by the Committee on Public Health on House 735.

blood vessels axially radiated cast shadows similar to tuberculous nodules. He advises exposures from different angles and also in series. Opie says that radiological examinations are necessary to determine the position and extent of lesions unaccompanied by physical sign. The physician should learn to take part in the interpretation of plates.

TUBERCULIN TEST—The tuberculin test determines infectivity but not necessarily lesions. Its chief value, therefore, is in determining infection in children. However, Homan regards it as a useful aid in adults for, in patients with active tuberculosis, the reaction to tuberculin comes earlier and is usually more marked than in the one with a quiescent lesion.

TUBERCLE BACILLI—Finding bacilli in the sputum offers conclusive evidence of tuberculosis. A single examination is not enough. Repeated failure to find bacilli does not rule out tuberculosis. Says Bray, 'guinea pigs develop tuberculosis from being inoculated with sputum from patients where numerous microscopic examinations failed to show the bacilli.'

RESPONSIBILITY OF DOCTORS—Potts, writing of the responsibility of doctor and patient in discovering tuberculosis, divides doctors into two groups. The first group is on the defensive, defending late stage diagnosis because it is all they know how to make, the second group has a personal feeling of responsibility; they are not fatalists and they are not on the defensive.



SUBSEQUENT RESULTS OF TREATMENT OF TUBERCULOSIS IN RELATION TO STAGE OF DISEASE

Bardwell analyzed the results of treatment covering 10,000 cases discharged from English sanatoria. Of those diagnosed 'minimal tuberculosis' on entrance 75% were alive five years later; of the moderately advanced, 50% and of the advanced, a small per cent only were alive. (*Tubercle* Volume VI, October 1924.)

There is rarely a positive or 'pathognomonic' approach to the early diagnosis of pulmonary tuberculosis. The approach is through general medicine and the diagnosis in practice usually one by elimination or exclusion.

ALLEN K. KRAUSE

AUTHORS QUOTED

H. A. Bray—N. Y. State Hosp for Incip. Tuber. Ray Brook, N. Y.

John B. Hawes 2nd—Former dir. clinic for pulm. diseases, Mass. Gen. Hosp., Boston.

Alfred Henry—Ind. U. Med. School, Indianapolis.

R. B. Homan—Former dir. The Homan San. El Paso, Tex.

F. M. McPhedran—Phipps Institute, Philadelphia.

O. O. Miller—Waverly Hills San. Louisville.

Charles L. Minor—Tuber. specialist, Asheville, N. C.

J. A. Myers—U. of Minn., Minneapolis.

Eugene L. Opie—Phipps Institute, Philadelphia.

Edward O. Otis—Tufts College Med. School, Boston.

John Potts—Tuber. Specialist, Fort Worth, Tex.

Henry Seioall—Prof. Med. Emeritus U. of Colo., Denver.

Gerald B. Webb—Colo. Found. for Research in Tuber., Colorado Springs, Colo.

REFORM IN THE CARE OF CRIPPLED CHILDREN INDICATED

Homer Folks, Secretary of the New York State Charities Aid Association, has stated that only one of every four children among the thirty thousand crippled children in New York State is getting adequate care.

This statement was made recently at a conference of the New York Association of crippled children at a weekly lunch of the New York Rotary Club.

Dr. Lewis A. Wilson, Dr. Walter J. Craig and Joseph J. Endres also addressed the meeting, each making constructive suggestions.

NOTES ON NATIONAL AFFAIRS

By Our Regular Correspondent

A GOVERNMENT HOSPITAL FOR NEW ENGLAND

A million dollars for a new hospital for veterans to be located in Southern New England has been approved by the Committee on World War Veterans Legislation of the House of Representatives, as has also \$300,000 for the existing hospital at Bedford, Massachusetts. These sums are part of a \$15,000,000 program which was to be embodied in a bill prepared by Congresswoman Edith N. Rogers of Massachusetts, who is now chairman of the subcommittee on hospitalization. There will be another new hospital in Kentucky also costing a million dollars.

MORE FEDERAL MEDICINE

Hardly a week goes by but a bill, or several bills, are introduced to extend free medical care to various classes of veterans. Among the latest are H. R. 11948 to grant hospitalization to any person discharged from the Navy or Marine Corps who has contracted tuberculosis in line of duty; H. R. 11759 to extend hospitalization provisions to all honorably discharged men from any branch of the military forces in any or all wars ever indulged in by this country, regardless of whether certain diseases enumerated are of service origin or not; H. R. 12102, to extend hospitalization to certain individuals who performed Mexican border duty. Senator Walsh of Massachusetts also has several bills to give out patient treatment to veterans of all wars who receive a pension or compensation from the government.

Hearings were held early in March on several other measures which would grant federal medical care to tuberculous leprosy and various other afflicted veterans of sundry wars and even to members of the Reserve Officers Training Camps during the World War. If all of the many bills on these and similar subjects should be passed, most of the physicians of the country would probably have to be engaged by the Veterans Bureau.

and boasting of the great specialists that may be had for nothing

The stream of taxicabs and automobiles which daily bring the alleged poor to the different hospitals must be very gratifying to the eminent men who are responsible for present conditions. They have made medical charity respectable through propaganda in the public press and have led a great number of people to think that the ordinary physician is in capable of diagnosing or treating disease.

As our editor has so ably stated the physician is entitled to a proper living for himself and family. The question is—Is the average physician obtaining that living through the profession? I know that many of our brethren are not. I know that many of us are forced to forego many of the necessities in order to make ends meet.

The cause of the urgent distress among physicians in the metropolitan district today, I assert after careful investigation and study, is as follows: The Peter Bent Brigham Hospital, The Boston Dispensary, The Massachusetts General Hospital, The Boston City Hospital and the Children's Hospital. These are the main factors that are eating into the incomes of the profession. The lesser hospitals are helping the work of eliminating the family physician but their influence is not felt so much.

In passing I must say a word on the social worker. Some of the smaller hospitals have these workers examine patients as to their financial resources and of course no one however well-to-do is turned away—no patients no social workers—

The community nurses have of late entered into the fray to obtain patients for the hospitals. Many of my patients, fairly well off have been advised to go to the different hospitals to have their ills 'properly' diagnosed. One of these nurses told a patient of mine with infantile paralysis that it was compulsory to go to the Harvard Clinic and that my treatment was not proper.

The hospitals reciprocate in the following manner. All cases that need dressings are referred to the community nurse. Does any physician ever have the experience of a hospital referring a patient to the family doctor for post-operative treatment? You would think that was the logical thing to do but it is practically never done. Only once was a patient referred back to me in twenty-five years and I will not mention the surgeon's name lest he lose caste.

Another element which has cut into the income of physicians in Boston is the Baby Hygiene Association or 'Well Baby Clinic'. As a result of the activities of this association the pediatric practice of physicians in Boston and surrounding towns has about disappeared. A sad part about this association is that it is supported by the taxpayers of Boston at a tremendous expense.

The nurses attached to this clinic chase over the city hunting up babies to go to the clinics.

The services of these nurses are greatly needed in the various city institutions but the faddists must be served and as a result, these nurses are paid for work that is worse than useless.

Many of the hospital staff of some of the hospitals are chafing under the conditions which obligates them to work all morning for the destitute Travelers Insurance Company or the decrepit Employers Liability Assurance Company and such like. Unfortu-

nately these men can say nothing and the cutthroat competition is getting worse every day.

The Society has appointed a committee to investigate conditions with reference to free clinics and health associations and if this committee gets the proper support great good may be expected from their work.

In the meantime physicians should treat all cases that are possible in the home or else in a private hospital. If a doctor sends a patient to one of the hospitals mentioned it is dollars to doughnuts that that is the end of the patient so far as the doctor is concerned. One of my patients who was delivered at the Boston Living In Hospital was told by the social worker there that on account of the baby being born a 'breech' she must take the baby to their specialist who would make up the feeding formula and that it would cost her ten dollars. In justice to the specialist he only charged her five dollars.

I find that practically all diseases are better treated in the home and I do not except even tuberculosis, providing that there is plenty of sunlight and plenty of food.

Doctors sending minor operative and ordinary diseases to the public hospitals are only depriving themselves of a practice and encouraging present conditions.

Very truly yours

CHARLES MALONE, M.D.

46 St. John Street,
Jamaica Plain, Mass.

THE TYPHOID CARRIER

March 26 1928

Editor NEW ENGLAND JOURNAL OF MEDICINE

I think it is of some interest that the typhoid carrier who caused the outbreak in Lincoln around December 1926 has in the opinion of the Department been cured of his carrier state. In this outbreak there were fifty-one cases and one death. So far as we know this is the first time that a gall bladder operation for this purpose has been performed at the expense of the State and also the first time that any health department has given the statement that in its opinion a permanent typhoid carrier is cured. We are following two others who have been similarly operated on at the expense of the State and a number of persons not professional food handlers who have had the operation at their own expense but none of these have been running long enough for us to feel sure that cure has been effective although the examinations to date are satisfactory. I think it is also important as the enclosed letter indicates to note that this carrier feels physically very much better than he did before the operation. The symptoms of abdominal distress previous to the operation were apparently due to gall stones and as all the carriers operated on showed gall stones as well as cholecystitis it would seem that it is entirely justified to argue that the carrier as well as the public will be benefited by such an operation. In view of the fact that there are presumably two thousand carriers in the State and although we feel that the operation should be done at the expense of the taxpayers only if the carrier is a professional food handler I am not sure whether this procedure is governmentally sound or not and should be glad of any criticism of it.

The new bill provides that the counsel to the senate, the counsel to the house of representatives, and an able and discreet person learned in the law pertaining to pharmacy to be designated by the board of registration in pharmacy, be commissioners for revising, consolidating and arranging the General Laws of the commonwealth pertaining to the practice of pharmacy, the conduct and operation of drug stores, the sale of drugs, medicine, poisons, narcotics and proprietary and patent medicines. They shall report to the next general court.

RECENT DEATHS

BAZIN—DR EDMOND ALBERT BAZIN, of Haverhill, a Fellow of the Massachusetts Medical Society died at his home in that city, of pneumonia, February 11 1928, aged 51

Dr Bazin was a graduate of the College of Physicians and Surgeons Boston, in 1905 and was formerly a druggist on the staff of the Gale Hospital

GRAHAM—DR DOUGLAS GRAHAM, pioneer writer and practitioner of the art of massage, died at his home in Brookline, March 24, 1928, at the age of 79. He joined the Massachusetts Medical Society in 1873 and was placed on the retired list in 1922

HERSOM—DR JANE LORD HERSOM 87 one of the pioneer women physicians of this country died March 29 1928, at her home in Portland, Me., after a long illness. Dr Hersom who was the widow of Dr Nahum A. Hersom, was born at Sanford and following the death of her husband, 47 years ago she studied medicine and was graduated from the Women's Medical College in Philadelphia in 1886. She was a member of the American Medical Association and the Women's Literary Union of Portland, and was also a director of the Mary Brown Home and the temporary home for women and children. She leaves a daughter, Mrs Rufus H. Jones

REILLY—DR JAMES ALOYSIUS REILLY, a Fellow of the Massachusetts Medical Society died at his home in Dorchester March 16, 1928, aged 50

He was a graduate of Harvard Medical School in the class of 1899. He is survived by his widow, Julia Louise Desmond Reilly

OBITUARY

DOUGLAS GRAHAM M.D.

Dr Graham, who died at his home in Brookline, March 24 1928 son of a Scotch farmer was born May 2 1848 at Kirkoswald Scotland. It was in this village that his great grandfather on his mother's side of the family, Hugh Rodger, was schoolmaster and taught Robert Burns mathematics and surveying dialling navigation and gauging. The old fashioned clock that belonged to Mr Rodger and timed Burns lessons was in the hall of Dr Graham's residence

On his father's side Dr Graham's great grand uncle was the veritable Tam O'Shanter whose name he bears. Dr Graham's descent has been traced to Sir William Wallace, the defender of Scotland thus proving what Bret Harte says that it is dangerous to climb the ancestral tree too far lest we find that

one of our ancestors has been hung for Wallace was not only hung but drawn and quartered, though in a good cause, however

At the age of 16 Graham emigrated to the United States and continued his studies at the academy at Lee, Mass. In 1873 he was graduated from the Jefferson Medical College of Philadelphia. His graduating thesis was on Massage and was considered one of the three best in a class of 149. He was immediately appointed one of the assistant demonstrators of anatomy at Jefferson and offered the situation of house officer at Wills Eye Hospital, but he preferred to return to Boston, where he had formerly resided. Here he was admitted to the Massachusetts Medical Society and later took post graduate courses in Harvard Medical School in pathology, neurology and orthopedic surgery. After his graduation he was engaged in private practice in Boston, devoting special attention to massage and physical methods of treating diseases. He wrote numerous articles as well as a large treatise on massage. His book on this subject appeared in 1884 and was the first in the English language. It passed into the fourth edition and has had a life of a third of a century, much longer than that of any medical book in the United States. Dr Graham has been regarded by the medical profession as an authority on this subject. Occasionally he visited Europe to investigate this branch of therapy. He was a member of the Alumni Association of Jefferson Medical College, of which he had been one of the vice presidents for several years of the British Medical Association, and of the American Medical Association.

He was in Change in Liverpool the day the Kearsarge sank the Alabama. Henry Edwards, a great grandson of Rev Jonathan Edwards, a friend of Lafayette's for five years was a friend of Dr Graham's for seventeen years. He passed away in Dr Graham's hand as he had expressed a wish to do, in 1885 at the age of 87 years.

Too nearsighted for ordinary amusements such as bowling, billiards and cards, Dr Graham had to invent most of his own diversions, which he did by making humorous verses, which he had printed and handed to his friends.

CORRESPONDENCE

ABUSE OF CLINICS

March 5 1928

Editor NEW ENGLAND JOURNAL OF MEDICINE

126 Massachusetts Avenue

Boston, Massachusetts

My Editor

The recent allusions in the Editorial Department of the JOURNAL to the abuse of clinics in Boston and other parts of the State are well founded. I have had occasion to make some inquiries relative to conditions in the various outpatient departments in Boston, and find that most of these clinics are run to a considerable extent, for the benefit of well-to-do people and patients of wealthy insurance companies.

The large hospitals in Boston make no pretence, whatever, to limit their outpatient departments. In fact there seems to be quite a rivalry, and through their social workers there is active competition. Each outpatient department having its champions.

Light refreshments will be served after the meeting to be one hundred and eighty-eight typhoid carriers in that State in 1927. Thirty-three were in State institutions.

Forty-seven cases of typhoid fever were traced to these carriers. One carrier was ill with typhoid fever in 1871. Removal of the gall bladder apparently resulted in cures in three cases.

THE ANNUAL MEETING OF TUFTS COLLEGE MEDICAL ALUMNI ASSOCIATION—At this meeting the following named officers were elected: President, Dr. George F. Keenan, '06; First Vice-President, Dr. Edward H. Hodgkins, '15; Second Vice-President, Dr. Loretta Cummins, '03; Third Vice-President, Dr. George S. Foster, '06; Secretary, Dr. Edward Martin, '11; Executive Committee, Dr. Thomas J. Scanlon, '03; Dr. Edmund W. Wilson, '07; Dr. Solomon H. Rubin, '08, and Dr. Edward L. Kickman, '23. Dr. Keenan is a colonel in the Medical Corps of the Massachusetts National Guard.

OFFICERS OF THE NEW YORK ELECTRO THERAPEUTIC SOCIETY—At the Annual Meeting of the New York Electrotherapeutic Society held at the Polyclinic Medical School and Hospital, No. 335 West 50th Street, New York, on Wednesday evening March 7th, 1928, the following officers were elected: President, Charles R. Brooks, M.D.; Vice-President, William H. Guillian, M.D.; Treasurer, Florio O. Reed, M.D.; Secretary, Madge C. L. McGuinness, M.D.; Executive Committee—Frank T. Woodbury, M.D.; John Ketterle, M.D.; Joseph J. Eller, M.D.; Leon T. Le Waid, M.D.

NOTICES

Professor Bruno Bloch, Director of the Dermatological Clinic, University of Zurich at Strasbourg, will lecture at the Harvard Medical School at 5 P.M. Monday, April 16. His subject will be "Formation of Pigment in the Skin."

THE CANCER CAMPAIGN IN MASSACHUSETTS

The feature which will characterize the opening night of the cancer campaign announced by last week's JOURNAL in several of the cities in which cancer clinics have been established is a mass meeting in which the Mayor of the city and some other notable guest will take part.

In Boston the campaign will be opened by Governor Fuller and Mayor Nichols at Symphony Hall on Monday evening, April 23rd. William Cardinal O'Connell is also expected to be present and to speak. Other speakers will include Robert B. Greenough, M.D., of Boston; W. A. Evans, M.D., of Chicago; and Richard C. Cabot, M.D., of Boston. A motion picture will be shown after the program of speaking has been completed. Admission to this meeting will be by ticket, although without charge. Tickets may be obtained by addressing Room 5-6, State House. A stamped addressed envelope required of the general public may be omitted by members of the medical profession in sending for tickets.

Similar meetings will be held at Lawrence, Lowell, Springfield, Greenfield, Worcester (on the evening of

Tuesday, April 24th) and New Bedford on a date not yet fixed.

It will be recalled by readers of the JOURNAL that this campaign of education will be conducted under the joint leadership of the Cancer Committee of the Massachusetts Medical Society, the American Society for the Control of Cancer, and the State Department of Public Health.

CHANGE OF ADDRESS

The address of Dr. George R. Minot, formerly 188 Marlborough Street, Boston, Mass., on and after April 15, 1928, will be the Thorndike Memorial Laboratory, Boston City Hospital, Boston, Mass.

REPORTS AND NOTICES OF MEETINGS

THE BOSTON DISPENSARY

CLINICAL STAFF MEETING

The March meeting of the Clinical Staff of the Boston Dispensary was held on Tuesday, March 27, 1928, in the Medical Department of the Boston Dispensary at 12:30 P.M.

After luncheon was served, Dr. Edwin H. Place of the South Department of the Boston City Hospital addressed the Staff on the topic "Some Aspects of Contagious Diseases."

There was an open discussion by the members of the Staff after the lecture.

Jos. J. SKIDBALL, M.D., Secretary

THE LAWRENCE MEDICAL CLUB

The monthly meeting of the club was held Monday evening, March 26, with H. V. Allen, M.D., 3 Logan Street, Lawrence, Chairman for the evening. J. J. Bartley, M.D., Subject: "Control of Communicable Diseases." C. L. Scamman, M.D., Boston, from the State Department of Health.

BLIZZARD CLASS REUNION

The class of Bellevue Hospital Medical College which graduated March 12, 1888, the memorable blizzard day, will celebrate its fortieth anniversary on Saturday evening, April 14, by a dinner at the McAlpin Hotel, the host being again the generous fellow alumnus of that year, Dr. D. Hunter McAlpin. Invitations have been sent out to about seventy members of the class whose addresses could be obtained. Any alumnus of that class who has not been reached is asked to kindly communicate with the acting secretary, Dr. S. Adolphus Knopf, 16 West 95th Street, New York City, and he will receive an invitation to the dinner. As an additional feature of the celebration, Dr. McAlpin wishes any one of the old boys who has a son who has followed in the footsteps of his sire to bring his son with him so as to make the occasion of the fortieth anniversary memorable for two generations.

MEETING OF THE ESSEX SOUTH DISTRICT MEDICAL SOCIETY

The Essex South District Medical Society held its stated meeting at Lynn Hospital on Wednesday, March 7, at 5 P.M., at which the following clinical program was presented:

1. Harvey F. Newhall, M.D.

The enclosed letters are self-explanatory and will perhaps be of interest to the profession in the State

Cordially yours,

GEORGE H. BIGELOW, M.D.,
Commissioner of Public Health

COPY

Bolton, Mass.,
March 18, 1928

Dr. George H. Bigelow

Dear Sir—I am unable to express my gratitude and thanks to you and your assistants, for the very great assurance, help, and relief, in the unfortunate, undesirable, and trying situation that I have passed through in the last fifteen months.

I seem to feel much improved in health, and hope to be more so.

I will try to keep you informed of my address and will be glad to be of service to you or anyone desiring the same.

I thank you

(Signed) JOHN H. MENTZER

R. F. D., Bolton, Mass.

COPY

March 14, 1928

To Whom It May Concern

The bearer, John Mentzer of Bolton, Massachusetts, was found to be a typhoid carrier in September, 1926. In February, 1927, he voluntarily submitted to an operation for the removal of his gall bladder, with the purpose of clearing up his carrier condition, if possible.

Cultures of bile and stools before the operation were positive. A few days after operation the stools became negative and have remained so to date. The Department asked for a minimum of twelve cultures to be submitted at monthly intervals. Mr. Mentzer was very coöperative and sent in twenty-three specimens, all of which were negative. A bile culture taken a year after the operation was also negative, as was also a stool specimen following an artificially created diarrhoea.

The Department, in view of the facts outlined above, is willing to state that in its opinion Mr. Mentzer is no longer a carrier of typhoid bacilli and that in its opinion it is safe for him to handle food for public consumption as far as spreading typhoid fever is concerned.

Yours truly,

GEORGE H. BIGELOW, M.D.,
Commissioner of Public Health

A CORRECTION OF A STATEMENT IN THE ARTICLE UNDER THE TITLE OF NURSING CANCER PATIENTS IN THEIR HOMES PUBLISHED IN THE JOURNAL OF MARCH 22, 1928

March 24, 1928

THE NEW ENGLAND JOURNAL OF MEDICINE,
126 Massachusetts Avenue
Boston, Mass.

Dear Sir

I wish to correct an inaccuracy appearing in the article on 'Nursing Cancer Patients in Their Homes' by Lucille Eaves and Associates, in the March 22, 1928 issue of the NEW ENGLAND JOURNAL OF MEDICINE.

In the first paragraph the article discusses the need for terminal beds for cancer patients. It quotes the

findings of the special report issued by the joint committee from the Departments of Public Health and Public Welfare, that cancer patients require an average period of terminal care of four to five months duration but it does not state that in the report it was estimated that only thirty per cent of all cancer patients needed such care. This correction greatly lessens the number of terminal beds needed.

During our nine months' experience at the Pondville Hospital we have found that the average case does not remain over one month. This difference between our previous estimate and our present experience indicates that fewer beds for terminal care are needed than were emphasized in the report and correspondingly far fewer beds than are intimated in Professor Eaves' article.

Very truly yours,

GEORGE H. BIGELOW, M.D.
Commissioner of Public Health

GIFTS TO THE MISSISSIPPI DOCTOR

NEW ENGLAND JOURNAL OF MEDICINE

The following books have been sent to our Mississippi doctor by the Harvard Medical School library:

Dudley Gynaecology 5th ed., 1908. Wood Therapeutics 11th ed., 1900. MacCallum Pathology, 1919. Kelly Operative Gynaecology 2 v., 1898. Hare Practical Therapeutics 6th ed., 1897. Halliburton Chemical Physiology & Pathology, 1891. American Textbook Obstetrics 1895. Flint Physiology 1905. Cushny Pharmacology & Therapeutics, 1899. Holt Diseases Infancy & Childhood, 1897.

Very truly yours,

ROY M. CUSHMAN, Director,
The American Red Cross
Boston Metropolitan Chapter

NEWS ITEMS

DR. GEORGE R. MINOT'S APPOINTMENT AS CONSULTING PHYSICIAN AT THE PETER BENT BRIGHAM HOSPITAL—Dr. George R. Minot, recently made Director of the Thorndike Memorial Laboratory at the Boston City Hospital and Professor of Medicine at Harvard, has been appointed Consulting Physician at the Peter Bent Brigham Hospital. Prior to these appointments, Dr. Minot was Associate in Medicine at the Peter Bent Brigham Hospital.

APPOINTMENT OF STAFF ASSOCIATE OF THE NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS 370 SEVENTH AVENUE NEW YORK CITY—Miss Mildred G. Smith, R.N., formerly Educational Agent of the Minnesota State Department of Health, has been appointed Staff Associate of the National Society for the Prevention of Blindness, with headquarters in New York City. Miss Smith will act as liaison officer between the Society and the various nursing organizations public and private. Miss Smith has had six years of public health experience. She was with the Red Cross in France during the War and has been on the staff of the Minnesota State Department of Health since 1925, first as Field Representative and recently as Educational Agent.

TYPHOID CARRIERS—The New York State Department of Health reports that there were found

Light refreshments will be served after the meeting to be one hundred and eighty-eight typhoid carriers in that State in 1927. Thirty-three were in State institutions.

Forty-seven cases of typhoid fever were traced to these carriers. One carrier was ill with typhoid fever in 1871. Removal of the gall bladder apparently resulted in cures in three cases.

THE ANNUAL MEETING OF TUFTS COLLEGE MEDICAL ALUMNI ASSOCIATION—At this meeting the following named officers were elected: President Dr. George F. Keenan, 06; First Vice-President, Dr. Edward H. Hodgkins, 15; Second Vice-President, Dr. Loretta Cummins, 03; Third Vice-President, Dr. George S. Foster, 06; Secretary, Dr. Edward Martin, '11; Executive Committee, Dr. Thomas J. Scanlon, 03; Dr. Edmund W. Wilson, 07; Dr. Solomon H. Rubin, '08, and Dr. Edward L. Kickman, 23.

Dr. Keenan is a colonel in the Medical Corps of the Massachusetts National Guard.

OFFICERS OF THE NEW YORK ELECTRO THERAPEUTIC SOCIETY—At the Annual Meeting of the New York Electrotherapeutic Society held at the Polyclinic Medical School and Hospital, No. 335 West 50th Street, New York, on Wednesday evening, March 7th, 1928, the following officers were elected:

President, Charles R. Brooks, M.D.

Vice-President, William H. Guillian, M.D.

Treasurer, Floyd O. Reed, M.D.

Secretary, Madge C. L. McGuinness, M.D.

Executive Committee—Frank T. Woodbury, M.D.

John Ketterle, M.D., Joseph J. Eller, M.D., Leon T. LeWald, M.D.

NOTICES

Professor Bruno Bloch, Director of the Dermatological Clinic, University of Zurich at Strasbourg, will lecture at the Harvard Medical School at 5 P.M. Monday, April 16. His subject will be "Formation of Pigment in the Skin."

THE CANCER CAMPAIGN IN MASSACHUSETTS

The feature which will characterize the opening night of the cancer campaign announced by last week's *JOURNAL*, in several of the cities in which cancer clinics have been established is a mass meeting in which the Mayor of the city and some other notable guest will take part.

In Boston the campaign will be opened by Governor Fuller and Mayor Nichols at Symphony Hall on Monday evening, April 23rd. William Cardinal O'Connell is also expected to be present and to speak. Other speakers will include Robert B. Greenough, M.D. of Boston, W. A. Evans, M.D. of Chicago and Richard C. Cabot, M.D., of Boston. A motion picture will be shown after the program of speaking has been completed. Admission to this meeting will be by ticket, although without charge. Tickets may be obtained by addressing Room 546, State House. A stamped addressed envelope required of the general public may be omitted by members of the medical profession in sending for tickets.

Similar meetings will be held at Lawrence, Lowell, Springfield, Greenfield, Worcester (on the evening of

Tuesday, April 24th) and New Bedford on a date not yet fixed.

It will be recalled by readers of the *JOURNAL* that this campaign of education will be conducted under the joint leadership of the Cancer Committee of the Massachusetts Medical Society, the American Society for the Control of Cancer and the State Department of Public Health.

CHANGE OF ADDRESS

The address of Dr. George R. Minot, formerly 188 Marlborough Street, Boston, Mass., on and after April 15, 1928, will be the Thorndike Memorial Laboratory, Boston City Hospital, Boston, Mass.

REPORTS AND NOTICES OF MEETINGS

THE BOSTON DISPENSARY

CLINICAL STAFF MEETING

The March meeting of the Clinical Staff of the Boston Dispensary was held on Tuesday, March 27, 1928, in the Medical Department of the Boston Dispensary at 12:30 P.M.

After luncheon was served, Dr. Edwin H. Place of the South Department of the Boston City Hospital addressed the Staff on the topic "Some Aspects of Contagious Diseases."

There was an open discussion by the members of the Staff after the lecture.

Jos. J. Skirball, M.D., Secretary

THE LAWRENCE MEDICAL CLUB

The monthly meeting of the club was held Monday evening, March 26, with H. M. Allen, M.D., 3 Logan Street, Lawrence, Chairman for the evening. J. J. Bartley, M.D., Subject: "Control of Communicable Diseases." C. L. Scamman, M.D., Boston, from the State Department of Health.

BLIZZARD CLASS REUNION

The class of Bellevue Hospital Medical College which graduated March 12, 1888, the memorable blizzard day, will celebrate its fortieth anniversary on Saturday evening, April 14, by a dinner at the McAlpin Hotel, the host being again the generous fellow alumnus of that year, Dr. D. Hunter McAlpin. Invitations have been sent out to about seventy members of the class whose addresses could be obtained. Any alumnus of that class who has not been reached is asked to kindly communicate with the acting secretary, Dr. S. Adolphus Knopf, 16 West 95th Street, New York City, and he will receive an invitation to the dinner. As an additional feature of the celebration, Dr. McAlpin wishes any one of the old boys who has a son who has followed in the footsteps of his sire to bring his son with him so as to make the occasion of the fortieth anniversary memorable for two generations.

MEETING OF THE ESSEX SOUTH DISTRICT MEDICAL SOCIETY

The Essex South District Medical Society held its stated meeting at Lynn Hospital on Wednesday, March 7, at 5 P.M., at which the following clinical program was presented:

1. Harvey F. Newhall, M.D.

Fascia lata graft as suture material in patella operation

- 2 Walter L. Hearn, M.D.
a—Hirschsprung's Disease
b—Polyneuritis
- 3 J. Armand Bedard, M.D.
a—Unexplained Alopecia
b—A case of ovarian cysts
- 4 M. C. Smith, M.D.
A case of Leishmaniasis tropica.
- 5 William G. Ward, M.D.
Rschlinghausen's Disease
- 6 Maurice T. Briggs, M.D.
Intestinal Infantalism
- 7 Harold A. Johnson, M.D.
Torsion of the Spermatoc Cord
- 8 Moving Pictures of Walker-Gordon Milk Production

The dinner at seven o'clock was followed by a short business meeting at which Dr. Mary R. Lakeman of the State Department of Health spoke of the observance of cancer week beginning April 23, and asked that the society take notice of this emphasis on cancer to be made at this time.

Dr. Henry R. Viets of Boston delivered a lecture with lantern slides and moving pictures upon "The Acute Infections of the Nervous System." Attendance 70.

WM. T. HOPKINS, Reporter

THE MASSACHUSETTS PSYCHIATRIC SOCIETY

A meeting of the Massachusetts Psychiatric Society will be held at the Boston Psychopathic Hospital, 74 Fenwood Road, Boston, Friday, April 20th, at 8 P. M.

The speaker of the evening will be Dr. A. A. Brill of New York. He will discuss the "Psychiatry of the Present Day from the Standpoint of the Psychoanalytical School."

WINFRED OVERHOLSER,
Secy. Mass. Psychiatric Society

APRIL MEETING OF THE WINTER TRAINING COURSE

This April meeting of the Winter Training Course for Officers Medical Section, Organized Reserves, U. S. Army, in Boston, and vicinity, will be held on April 11th at the University Club, 40 Trinity Place, Boston, Mass.

This meeting will begin promptly at 8:00 P. M. The room number will be on the announcement board at entrance on first floor. Officers attending the meeting will be given credit for participation in military activities.

This will be the last meeting of the season.

WM. LYSTER, Colonel, M. O.

THE MEETING OF THE NEW ENGLAND PEDIATRIC SOCIETY

The one hundred and eighth meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, April 13, 1928, at 8:15 P. M.

The following paper will be read: "The Results of the Use of the Calmette Tubercle Bacillus Vaccine

in Infants and Animals," William H. Park, M.D., New York.

WILLIAM W. HOWELL, M.D., President
RANDOLPH K. BYERS, M.D., Secretary

BOSTON MEDICAL HISTORY CLUB

The next meeting of the Boston Medical History Club will be held at the Boston Medical Library on Friday, April 13th, at 8:15 P. M. Annual meeting with election of officers.

PROGRAM

Dr. Isador Coriat: "Why did Harvey Ascribe the Discovery of the Circulation of the Blood to Galen?"
Dr. Georges Sartorius: "Muslim and Jewish Science"

THE LAWRENCE CANCER CLINIC

Announcement was made by the Joint Committee of the Lawrence Medical Club and the Lawrence General Hospital of the opening of the Lawrence Cancer Clinic, at the Lawrence General Hospital, on Tuesday, April 24, 1928, at 10 A. M. Future cancer clinics will be held at the Lawrence General Hospital upon the first and third Tuesdays of each month, during the year, at that hour. The clinics will be manned by the thirty-five members of the Medical Staff of the Hospital. Like the other Cancer Clinics through Massachusetts, it will be primarily a diagnosis clinic, and the cases will then be referred by letter, to the family physician. To open the cancer week education campaign for Lawrence, Methuen, Andover and North Andover an open meeting will be held at Oliver School hall, 183 Haverhill Street, Lawrence, on Monday, April 23, at 8 P. M., at which a talk on cancer will be given by a speaker of prominence.

J. F. B.

MEETING OF THE HARVARD MEDICAL SOCIETY

The next regular meeting of the Harvard Medical Society will be held as usual in the amphitheatre of the Peter Bent Brigham Hospital, Tuesday evening, April 10th, at 8:15 P. M. The program follows:

Presentation of cases

Bacterial allergy in relation to infections. Dr. Hans Zinsser

PERCIVAL BAILEY, Secretary

MASSACHUSETTS GENERAL HOSPITAL

Staff Meeting, Moseley Memorial Building, Thursday evening, April 12, 1928, at 8:15 P. M. The program will be given by the Neurological and Neuro-Surgical Services, and includes the following subjects:

(1) Dr. C. A. McDonald: Demonstration of some unusual ocular manifestations of encephalitis. (2) Dr. Sidney Biddle: Pneumothorax, with demonstration of X-ray plates. (3) Dr. George Clymer: Local fat atrophy following insulin injection. (4) Dr. Jacques DeBusscher: Chloroform therapy in trigeminal neuralgia, tic and migraine. (5) Dr. John S. Hodgson: Chordotomy for the relief of pain. (6) Dr. W. J. Mixer: Alcohol injections in angina pectoris. (7) Dr. H. C. Solomon: Trypanamide and malaria in the treatment of neurosyphilis. Alternate subjects: Dr. Charles S. Kubik: Progressive bulbar

palsy Dr J B Aver and George Tobey The cerebrospinal fluid in the diagnosis of lateral sinus thrombosis

Physicians students and nurses are cordially invited to attend

SOCIETY MEETINGS

April 10—Harvard Medical Society For complete notice see page 376

April 11—Annual meeting of the Winter Training Course Detailed notice appears on page 376

April 12—Massachusetts General Hospital Staff Meeting Detailed notice appears at the end of Massachusetts General Hospital Staff Meeting report on page 321 Issue of March 29

April 13—Boston Medical History Club See page 376 for detailed notice

April 13—Meeting of the New England Pediatric Society Detailed notice appears on page 376

April 14—Blizzard Class Reunion Complete notice appears on page 375

April 20—Massachusetts Psychiatric Society For detailed notice see page 376

April 24—Lawrence Cancer Clinic See page 376 for complete notice

June 18-22—Convention of the Catholic Hospital Association Complete notice appears on page 1597 Issue of February 16

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

May 2 1928 (Wednesday)—Annual meeting at Haverhill 12 30 P M at the Haverhill Country Club Brickett Hill Gile Street Haverhill.

May 3 1928 (Thursday)—Censors meet for examination of candidates at Hotel Bartlett, 95 Main Street, Haverhill at 2 P M Candidates should apply to the Secretary J Forrest Burnham MD 567 Haverhill Street, Lawrence at least one week prior

Essex South District Medical Society

April 11 (Wednesday)—Essex Sanatorium Middleton Clinic at 5 P M Dinner at 7 P M

Dr Raymond S Titus Obstetrical Emergencies Discussion by Drs J J Egan of Gloucester and A T Hawes of Lynn, 10 minutes each and from the floor

May 3 (Thursday)—Censors meet at Salem Hospital for the examination of candidates at 3 30 P M. Candidates should apply to the Secretary Dr R E Stone Beverly at least one week prior

May 8 (Tuesday)—Annual meeting Detailed notice appears on page 1437 Issue of January 26

Norfolk District Medical Society

May 3—Censors meeting Roxbury Masonic Temple 4 P M. Applications will be mailed by the Secretary upon request. Detailed notice appears on page 271 Issue of March 22.

May 8—Annual meeting Details to be announced

Suffolk District Medical Society

Combined meeting of the Suffolk District Medical Society and the Boston Medical Library will be held at the Boston Medical Library 8 The Fenway at 8 15 P M. as follows

April 25—Annual meeting Election of officers Prof Julius Bauer Professor of Medicine in the University of Vienna, and Physician-in-Chief to the Polyclinic, will deliver an address. His subject will be announced later

The medical profession is cordially invited to attend this meeting

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear

BOOK REVIEWS

Cannula Implants and Review of Implantation Techniques in Esthetic Surgery By CHARLES CONRAD MILLER MD The Oak Press Chicago 1926

A small book dealing with various types of bone cartilage fat, rubber and gutta percha implantations to create better appearing scars and wounds Interesting but not extremely clear

A Manual of Gynecology By JOHN OSBORN POLAK, MSc., MD, F.A.C.S Lea & Febiger Philadelphia

A very complete manual of gynecology including the physiology of the female organs and diagnosis of gynecological conditions and also numerous paragraphs upon special diseases of the vulva vagina, etc. The numerous diseases of the uterus and infections of the uterus are separated into two chapters, as are benign neoplasms and malignant tumors of the uterus There is an interesting paragraph on sterility which is included in the same chapter as gonorrhea At the end of the book there is a short but good paragraph on the glands of internal secretion A well written concise book.

Transfusion of Blood By HENRY M FEINBLATT M.D The Macmillan Co., 1926

A small monologue on blood transfusion with a historical résumé First physiological considerations, methods of grouping donors and various methods of transfusions are discussed and then the authors method is given in great detail This consists of a single syringe with a two-way stopcock. The method looks simple and probably is in the hands of an expert, but like all mechanical appliances is difficult in the hands of the ordinary surgeon

Manual of Operative Surgery By SM HOLBURN J WARING MS MB BSc (Lond) F.R.C.S Humphrey Milford Oxford University Press 1927

A short manual of surgery in its sixth edition It is brought up to date by revised chapters on the various specialties Nearly all surgical techniques and methods are included in a short, brief manner For quick review of a subject the book would be valuable but for study would not be full enough A worth while reference

The Surgical Clinics of North America June 1927 Philadelphia and London W B Saunders Company

Interesting articles on various lesions from the foremost clinics in Philadelphia All of the articles are well done and there is nothing especial to review in detail

The Surgical Clinics of North America April 1927 Cancer

Numerous articles upon cancer from the various surgeons interested in this disease throughout the country Short articles well done which give one a good idea of the various types of tumors and their treatment. There is a good article on the physical considerations and use of radium and x ray

Die Leitungsbahnen des Schmerzgefühls und die chirurgische Behandlung der Schmerzzustände PROFESSOR DR. O FOERSTER. Urban & Schwarzenberg Berlin and Wien 1927

This monograph is a very complete treatise on pain and its surgical treatment. The first portion of the book is devoted to a discussion of the character of pain and its conscious perception. This is followed by the anatomy of the pathways by which painful stimuli are transmitted to the brain The effect of interruption of these pathways at different points and particularly the resulting areas of skin anes-

thesia following section or injury of various nerves and nerve roots, is very well demonstrated

The section on treatment of various painful lesions is very complete. One gathers that the author does not depend on the section of posterior nerve roots (Foerster's operation) as much as he has done in the past but is now using, in many cases, section of the spinothalamic tract as advocated by Fraser and Spiller. In this connection it is interesting to remember that section of the posterior spinal roots was performed by Dr. J. W. Elliott in March, 1902. I believe this was the first time this operation was performed in Boston.

An interesting variation from our usual technique here in America is the substitution of weak solutions of formaldehyde for alcohol in the injection of sensory nerves for the relief of pain.

The book is well illustrated, but like so many scientific works published in Europe, the paper covered volume will need binding before it can be placed in one's library.

This monograph will be of great value to the student and also to the surgeon who deals with cancer and other painful lesions.

Diseases of Women By HARRY STURGEON CROSSEN, M.D., F.A.C.S. The C. V. Mosby Company, St. Louis, 1926.

A very excellent reference book and practical book on Gynecology brought up to date by Dr. Crossen's various associates. All the new methods of gynecological diagnosis are present and the newer pathology such as adenomyomata, etc., are described. There are a great many photographs which add a great deal to its value. It seems to be the equal of any of the modern Gynecologies.

Percival's Medical Ethics, edited by CHAUNCEY D. LEAKE. The Williams & Wilkins Company, Baltimore, 1927. xi + 291 pp.

This new edition of Percival's Medical Ethics with an introductory essay by Professor Leake and a bibliography by Thomas Percival, is a welcome addition to the literature on medical history. Although the original work of Percival refers chiefly to the rules of etiquette developed in the profession to regulate the professional contacts of its members with each other, it still has much of interest for the modern reader. Professor Leake has written a brilliant introduction to the volume.

The Springtime of Physick, Being a Diverting Outline of Medicine and Surgery by LAURANCE D. REDWAX, M.D. Free Press Printing Co., Burlington, Vt., 1928. ix + 68 pp.

The book aims to present bits of medical history in a facetious manner. The style is rather fatuous and the book could only be recommended for those who have many idle moments. As a humorous publication it did not greatly appeal to the reviewer.

Safeguarded Thyroidectomy and Thyroid Surgery. A Manual Designed as a Practical Guide for the General Surgeon. By CHARLES CONRAD MILLER, M.D. F. A. Davis Company, Publishers, Philadelphia.

of the introduction that the purpose of this book is particularly to urge the general surgeon to take on thyroid surgery, and to indicate to him how baseless are his fears of goiter surgery. The reviewer quotes below one paragraph from the introduction as typical of the book.

"You will find reviewing the many other books upon goiter surgery, that writers in their *bid for patients* try to impress readers that in learning to do goiter surgery the operator will kill half a dozen people. To a conscientious man this is an effective deterrent. If an operator did, it would be a crime. Adequately informed, any surgeon who is fairly experienced in general surgery can do his first goiter operation just as safely as he can do his first hundred. Hence this book, for I feel strongly that general surgeons should do thyroid operations."

The simple quotation of the above paragraph could effectively constitute a review of this book. The reviewer feels, however, that the above statements are so misleading and wrong, that nothing short of a statement that in his opinion they are not true is permissible.

Neither the technical nor the pre and post-operative management side of thyroid surgery is as simple as the author states. Both require an extensive background of experience and without it mortalities will continue to occur until it is obtained. If the author has had an extensive thyroid experience it may seem simple now. Contempt, however, even based upon familiarity has led to many a calamity in surgery and elsewhere.

The book is divided into a discussion of the signs of thyroidism and a few of its complications and then the so-called Technique of the Safeguarded Operation.

In the reviewer's opinion there is very little in the book to recommend it.

BOOKS RECEIVED FOR REVIEW

- The Mechanics of the Digestive Tract*, by Walter C. Alvarez, M.D. Published by Walter B. Hoeber, Inc. 447 Pages.
- The Surgical Clinics of North America*. Published by W. B. Saunders Co. 210 Pages.
- Local Anesthesia* by Geza de Takats. Published by W. B. Saunders Co. 221 Pages.
- Treatment of Diseases in Infants and Children*, by Hans Kleinschmidt. Published by P. Blakiston's Son & Co. 359 Pages.
- Handbook On Diet* by Eugene E. Marcovici. Published by F. A. Davis Co. 323 Pages.
- Safeguarded Thyroidectomy and Thyroid Surgery*, by Dr. Charles C. Miller. Published by F. A. Davis Co. 261 Pages.
- Diseases of the Intestines and Lower Alimentary Tract* by Anthony Bassier. Published by F. A. Davis Co. 905 Pages.
- The Glasgow Medical Journal*, Edited by John Patrick and George Allan.
- Mongolism* by Kate Brousseau and H. G. Brainerd. Published by The Williams & Wilkins Co. 210 Pages.
- Pharmacotherapeutics, Materia Medica and Drug Action* by Solomon Solis Cohen and Thomas S. Githens. Published by D. Appleton and Company. 2009 Pages.
- Muscle Function* by Wilhelmine G. Wright. Published by Paul B. Hoeber, Inc. 188 Pages.

The New England Journal of Medicine

VOLUME 198

APRIL 12 1928

NUMBER 8

ORIGINAL ARTICLES

IDEALS IN THE TREATMENT OF DIABETES AND METHODS FOR THEIR REALIZATION*

BY ELLIOTT P. JOSLIN, M.D.

PRACTICAL diabetic ideals do not yet include the cure of the disease. When, however, a diabetic patient under treatment for 17 years knows no one among his friends who is as old 79 years and also as well as himself a diabetic ideal has been attained (Case No. 341). When a girl has survived diabetes a decade and has become a successful and attractive Junior in a leading college at the age of 20 years that girl has established an ideal for other children to follow (Case No. 1469). When a diabetic, 51 years old nine years after the discovery of the disease has active bilateral pulmonary tuberculosis with positive sputum and in the course of a year gains 20 pounds in weight becomes sputum free and raises his tolerance for carbohydrates 100 grams and in so doing uses but 24 units of insulin a day, I feel he has demonstrated with diet and a little insulin sufficient regenerative capacity both generally and pancreatic to stamp him as an ideal result (Case No. 5738). When a minister's wife with seven children, at 46 years of age has a blood sugar of 0.40 per cent and a glycosuria of 4.8 per cent and five months later is sugar free with a tolerance for carbohydrate 250 grams, protein 75 grams and fat 100 grams with five units of insulin once a day, I consider that she is evidence of the patient work of scientists in laboratories clinics and homes, who have demonstrated that diabetes attacks a part but not the whole pancreas that a little undernutrition is a fundamental aid in treatment that restriction of fat promotes tolerance for carbohydrates that even a few units of insulin are advantageous and that a diabetic discovered early and not damaged with a low-carbohydrate high-fat diet is an ideal subject for treatment (Case No. 6213). Finally when Case No. 3137, who, since her diabetes began four and a half years ago at the age of 45 years has successfully withstood typhoid fever in operation for gall stones and diabetic coma, each on a different occasion appeared in

my office last week sugar free I felt warranted in reassuring other diabetics, and especially so because this patient, after taking insulin 45 years, has lived without it for 9 weeks.

Statisticians nevertheless, keep reporting that diabetics are dying about as numerously as ever and I fear are inclined to brush away such examples as those just cited as of trifling value and merely exceptions. But I say what can be done for 5 patients can be done for 5,000. And this your own patients are proving. The published results of treatment of groups of diabetics in New York California Boston Vienna and many other places based upon fresh data show that diabetics are living, have ceased to die of their disease, and save in isolated instances, succumb to complications or intercurrent illnesses. To be specific, during the 12 months ending July 1 1927 of the 1241 diabetics treated and traced among my 1329 seen that year the total mortality was 3.5 per cent. Even if the mortality among the 88 untraced cases was 2 or 3 times as large as that of the aggregate, it would not materially affect the result. Furthermore although 43 cases died, there was not a single death due to diabetic coma. I cannot help believing thus a diabetic ideal reached and it is mentioned because the results of other clinics are not dissimilar to my own. Indeed for the entire State of Massachusetts during 1925 the ratio of the mortality from diabetes among those under 20 years of age to the total diabetic mortality reached its lowest level in 25 years.

The growing number of living diabetics is proof that treatment has improved. Instead of half a million to a million there must be a million to a million and a half of diabetics in the country today. There are many more than formerly first because they live so much longer. My own data have changed from an average duration of 4.8 years prior to 1914 to 7.7 years ending July, 1926. For Jews since the discovery of insulin it is 10 years the highest duration attained by any of my groups thus far. It will take years to determine whether the number of fresh cases of diabetes is actually in

*Read before the New York County Medical Society Academy of Medicine Monday January 22, 1928.

*For record and address of author see "This Week's Issue" page 41.

creasing apart from the increment of increase due to better medical diagnosis. In a second, but indirect way, the increase in the number of diabetics is shown by their advancing average age at death. Prior to 1914 this was 44.8 years for my patients, but for the four years since the discovery of insulin it has risen to 55 years and for the year ending July 1, 1927, the average age at death of my diabetics was 60 years. The Metropolitan Life Insurance Company is proud, and justly so, that the average expectation of life of their group policy holders has risen 9 years in the course of the last 16 years but the age at death of the diabetics has advanced 16 years in a shorter period of time. The Metropolitan Life Insurance Company deals with the individuals who are presumably healthy at the beginning of their enrollment, my patients at the beginning of enrollment have all been handicapped with diabetes. The reason for the diabetic advance in age at death is largely because diabetic children have ceased to die. Thus there were but two deaths among 235 children in the year cited. Frankly, he is a pretty healthy man today who can live as long as a diabetic.

Coma disappeared from the mortality tables of the 1200 cases seen and traced last year and the two deaths among the 235 children were due to disease of the mastoid and pneumonia. A death from coma is a needless death we all felt even before the discovery of insulin. Last year saw this ideal attained and on a wholesale scale. No such good fortune this year. One diabetic patient took up Christian Science and *contrary* to the Christian Science Healer's advice—mark that sign of progress—gave up insulin and died in four days. Another instance was a boy whom I had not seen for one year and a half, for whom in the interim his mother had taken out life insurance. The treatment of his doctor can be summed up in the words—*requiescat in pace*. These cases furnish morals for Christian Scientists and Insurance Companies. To the former I would say if you want to treat a diabetic with Christian Science long, don't let his insulin run short, to the latter, when a report of a death by diabetic coma comes in, investigate it, prevent another, publish your conclusions, and it might be well to put them on the radio. (When I talked over the radio and told a New England audience to wash their feet before they said their prayers, the news spread and I have seen less dirty diabetic feet since.) Coma is the result of carelessness. The patients who develop it have failed to keep in touch with their family physician. No diabetic specialist can ever replace that man.

With coma conquered through continued observation and insulin, one is left to deal with arteriosclerosis. Of 609 diabetic deaths since my use of insulin, 47 per cent have died of dis-

heart, brain or kidneys. The fatal diabetic of five or more years' duration, whether old or young, thus far has proved at autopsy to be an arteriosclerotic and in 90 per cent of the living diabetics of 10 or more years' duration the calcification of the arteries can be seen by X-ray (L. B. Morrison). One-fourth of all the diabetic deaths in Boston over a long period of years was due to lesions of the feet, presumably starting upon an arteriosclerotic basis (Hyman Morrison.) Arteriosclerosis today in diabetes stares us in the face and we must attack it from all angles.

The prevention of arteriosclerosis and of the development of premature old age among diabetics is favored first of all by the reduction of weight toward a normal level just as is advised for any individual who does not have diabetes. No one urges any patient predisposed to heart disease or to hardening of the arteries to gain weight. About the chief weapon in treatment which cardiologists have for such cases is the gradual reduction of weight, and how much more this holds for diabetics than for the ordinary individual! One of the criticisms which I have against the high carbohydrate diet in the treatment of diabetes, as advocated by Sansum and others, is the undue gain of weight which has resulted so often in their patients from the use of too much food. A diabetic should never be allowed to exceed the weight which is considered proper for the ordinary individual.

The avoidance of a high fat and low carbohydrate diet by patients during a considerable term of years is another preventive influence upon the development of arteriosclerosis. Bowen, in Buffalo, noticed this in one of my patients and recorded that this 10 year diabetic who had lived upon 100 grams of carbohydrate was the only one in a series examined who failed to show calcification of the arteries by X-ray. I am inclined to believe that the daily metabolism of 100 grams or more of carbohydrate in the body will prevent the premature development of arteriosclerosis partly because of the carbohydrate itself, but also very likely because it reduces the large quantity of fat required for metabolic needs. Metabolism goes on more smoothly, as Krogh showed years ago, when exclusive diets, be they carbohydrate or fat, are avoided. I suspect that the development of arteriosclerosis in our diabetics has been caused largely because the carbohydrate in the diet was lowered and the fat increased out of all proportion. Prior to weight diets this resulted in coma, but with undernutrition and insulin, patients avoid coma and live long enough to show the more subtle effect of the high fat diet, namely atheromatosis.

Body fat is mechanically harmful irrespective of its source and it may also be chemically harmful whether it originates from undue quantities of fat in the diet or under quantities of carbohydrate. Whether any special fat leads to pre-

mature arteriosclerosis we cannot say. Various writers have pointed out in animals the quick deposition of cholesterol in the arteries when cholesterol is given. An egg contains approximately 0.40 of a gram of cholesterol and the total cholesterol in the body of an adult is about 50 grams, 0.7 grams per kilogram body weight. One of my patients long since dead ate 10 eggs for breakfast. All recognize that cholesterol is metabolized with difficulty. It is a question whether a diabetic over 50 years of age should take more than one dose of cholesterol a day.

So many of my patients in years gone by have been dosed with and succumbed to an excess of fat in the diet that my attention was attracted to a similar result in a beautifully reported case in the current number of the *American Journal of Medical Sciences*. The patient was a mild diabetic, a familial diabetic, and a gall stone diabetic, the types which in my experience are the most benign. For 13 years this mild diabetic, with onset at the age of 45 years, was conscientiously treated and studied, but throughout most of the period lived on a diet low in carbohydrate with an excess of fat, and his weight rose in the 5 years before his death from 97½ pounds to 174 pounds. Finally in coma insulin seemed almost ineffective. I abstract the following from the protocol of the autopsy:

"Equally interesting as the findings in the pancreas were those in the blood vessels, particularly those of the base of the brain. The vertebral arteries contained large golden yellow nodules. The arteries of the circle of Willis were beaded and firm and resembled the usual severe arteriosclerosis except for the bright yellow color.

Sections from the vertebral, basilar and internal carotid arteries showed marked fatty infiltration. The lumina of some of the vessels were narrowed by the thickened intima, and the large fatty cells beneath it. The media of some of the vessels were almost completely replaced by calcium and fat. The aorta showed marked fatty changes beneath the intima, and irregular thickening, by fibrosis, of the intima. In places the media was encroached upon by fat-laden cells, and small amounts of calcium were present between intima and media.

In a section of the femoral artery the arteriosclerosis corresponded to the peripheral arteriosclerosis known as the Mönckeberg type. Chemical analyses of the bright yellow portions of the vessels suggested the presence of vegetable lipochromes in that they had high cholesterol contents.

The heart weighed 420 gm. There was thickening and fatty degeneration of the aortic leaflets of the mitral valve and sinuses of Valsalva. There were some atheromatous plaques in the pulmonary artery and an increase in epicardial

fat. The coronary orifices were patent, but the arteries were markedly sclerosed.

A section of the coronary artery showed moderate intimal thickening and marked fatty infiltration beneath the intima. Many large fat-laden cells were present, partly encroaching upon the media of the vessel."

This patient did not live in vain. He becomes one of Woodvatt's so called "pedigreed diabetics" and as celebrated as his own cases and "Bessie B". With this portrait before us I doubt if ever again anyone will expose a diabetic to a low-carbohydrate high-fat diet for so long a period. Without such treatment as this patient received in the decade before the discovery of insulin undoubtedly he would have died, but who of us believe with the evidence now available that if in the earlier years when the diet was restricted in carbohydrate, moderate undernutrition had been continued and obesity avoided, such excessive arteriosclerosis would have developed? The body of this patient seems literally to have been steeped in fat. It is from an excess of fat in the tissues I believe diabetes most commonly begins and from an excess of fat in the tissues or diet, diabetics whether human or canine, died formerly of coma, but today, at least so far as humans are concerned, of premature arteriosclerosis.

As for the ineffectiveness of insulin in this patient, I would point out that he had edema, a complication rather unusual in diabetic coma. As a rule this is a favorable sign in a pre coma case, but insulin has changed our opinion of edema. Insulin works most effectively in the dry patient less effectively in the wet. Thus in my patient desiccated by diarrhoea one half a unit of insulin caused hypoglycemia, while in this edematous coma patient 100 units of insulin availed little. So much for the unusual work of insulin in this case. To this uncommon edema the excessive quantity of stored cholesterol may have contributed, because cholesterol more than lecithin always holds back water in the body.

There is a study now being made in the laboratories of the New England Deaconess Hospital on the fat partition of the plasma of insulin-treated diabetics. This study is designed to determine whether or not cholesterol values can still be considered an index of variations in fat metabolism. In 100 patients presenting no marked abnormalities of the disease such as coma, the average value for cholesterol was found to be 230 mgs per 100 c.c., the average value of fatty acids was 432 mgs per 100 c.c. In all instances there seemed to be a parallel relation existing between these two values. We are not in a position to report the lecithin values yet, but these values may not change our views about the parallelism existing between the different fat fractions.

You will notice that the average cholesterol value found is identical with the normal aver-

age value reported by Bloor in 1917. This is quite in line with the values found in the cholesterol investigation made last year. In 116 cases studied at that time the average value for cholesterol was found to be 257 mgs. Bloor has given 230 as the average for normals and 290 as the average for diabetics. Gray found 72 per cent of our diabetics whom he studied to have cholesterol values above normals. In our study last year it is encouraging to report that Miss Hunt and her co-workers found that only 40 per cent of our cases were above Bloor's normal figures and 60 per cent were normal or below.

In the list of cases with diabetic ideals attained I hope you notice the building up of considerable carbohydrate tolerances in diabetics with a few units of insulin. In the patient with tuberculosis the tolerance rose to 180 grams with 24 units and in the other patient to 250 grams with five units. This latter patient is mild I allow, because she was middle aged and of normal weight, although the urine contained 4.8 per cent sugar and the blood sugar was 0.40 per cent. To be sure Petren would have called her *ipso facto* a severe diabetic, but a mere elevation of blood sugar does not imply severity. It simply means a case untreated and I would infinitely rather have such a patient come for care with a glycemias of 0.40 per cent than a patient who had been exposed to the baneful influence of a low-carbohydrate high-fat diet with a blood sugar half as great.

These patients represent what can be accomplished with simple dietetic treatment and a little insulin, and the secret may be that they are not overnourished at the start and a little time is given the pancreas to regain its impaired function. The same condition is attained by giving large quantities of carbohydrate, with a little fat, along with 100 or 200 units of insulin, but I cannot reconcile myself to the wisdom of giving a diabetic, whose disease is loss of power to assimilate carbohydrate, a large quantity of carbohydrate even though one can protect the patient with heroic medication. I know many such patients do wonderfully well, but I question whether they are on as safe and sane a basis as those who gain tolerance through the development, perhaps regeneration, of their own pancreas.

It is fortunate that we all do not treat diabetics alike. Time alone will show the best methods. However again I would urge that anyone who adopts such radical changes from the orthodox method of treatment of diabetes which has come down to us from the ages should keep his patient under close supervision and in the closest touch with those who are carrying out these innovations on a large scale. For the average phy-

sician I believe it is safer to try with diet and insulin to build up a tolerance for carbohydrate of 100 grams, with a moderate number of units and later, if possible, increase the carbohydrate and decrease the insulin, rather than to use large doses of insulin. From personal experience, and that of some of my friends (see also Preisel and Wagner), some of the patients who have taken very high carbohydrate diets and large doses of insulin have been subject to hypoglycemic attacks frequently and in more than one instance the patient has voluntarily changed back to a more conservative diet. I suspect that proponents of these diets will reply that it is because of those patients I have treated by old-fashioned methods that they have been led to the new. All this is immaterial if we remember that the treated diabetic lives, but the neglected diabetic dies.

Every diabetic child should be a boy or girl scout. Our diabetic children are living, not dying, although it is hard for us doctors to comprehend this fact. What the diabetic child needs today is something more than insulin and diet and that is exercise, but most of all morale. Unless you can develop morale in a diabetic child his future is in trepidation. Therefore, I feel that the one practical diabetic ideal which can and should be attained this year is to turn our diabetic children into scouts and send them off to children's diabetic camps. Last year this was tried with a group of my diabetic girls and the plan was so successful that the mother of one of the girls volunteered to leave her own house this summer and place it at my disposal for another girls' camp. I believe that every diabetic clinic in every city should make some arrangements to provide a diabetic camp for their diabetic children, not only for what is gained thereby during the summer but because of the perpetuation of its influence throughout the year. You cannot realize how happy these children were to live together and to have no one of their companions say to them, "You are a diabetic." They swam, hiked and cooked their own meals. They had a good time and yet adhered to their diet. They realized they were doing what their friends were doing elsewhere. Eventually they will learn from contact with other diabetics how to carry on all these relations in association with non diabetics, but until they have had the disease a good many years they must be protected. If a child cannot go to a diabetic camp, let him learn from association with a Counsellor all the ideals of a camp.

PRIMARY ADENOCARCINOMA OF THE DUODENUM

Report of Twelve Proved Cases Summary of Literature

BY JOHN W. DEWIS, M.D. AND GEORGE W. MORSE, M.D., F.A.C.S.*

TEN per cent of all cancers appear in the large and small bowel more than thirty per cent of all cancers occur in the stomach nearly half of all carcinomata are found in the gastrointestinal tract. This is a rough estimate. It is difficult to make exact statements because cancer statistics are drawn from many sources and sometimes from duplicate records. No evidence has been found to explain why cancer so often ravages the stomach and large bowel but seldom invades the small intestine the primitive gut. It is strange that this enemy so frequently attacks but rarely breaks through the pyloric and ileocecal gates.

THE COMPARATIVE OCCURRENCE LOCATIONS AND AGE INCIDENCE

Eusterman, Berkman, and Swan¹ estimate that only three per cent of the intestinal cancers are found in the small bowel. Brill², after a study of the literature of primary intestinal carcinoma up to 1904, computed that this disease was present in the duodenum in 0.3% of all carcinomata found in the bowel. This means that one primary cancer of the duodenum is found among every 300 to 400 cases of cancer from all parts of the bowel. Brill further quotes the older writers (2, pp. 826-829) to show that the duodenum and the rest of the small intestine are about equally affected that "one is as infrequent as the other and that both are rare, that carcinoma of the jejunum is practically unknown." There is now sufficient proof that cancer may develop in any part of the small bowel and the Mayo Clinic since its foundation as stated in the report of 1925³ has dealt with 15 cases of primary carcinoma of the jejunum, 9 of the ileum, and 15 of the duodenum. Jefferson³ aptly states, what is doubtless true that "inch for inch the duodenum is more likely to undergo carcinomatous change than the jejunum or ileum," and this expression is repeated by later writers. Deaver and Radwin⁴ in their report of a case and review of the subject of primary cancer of the duodenum state "that the relative proportion between carcinoma of the duodenum and that of the jejunum and ileum is 47.7% to 52.2%."

These writers³ have noted that 66% of cancers of the duodenum appear in the second portion while only 22% are found in the first part and 12% in the terminal part. In the series of the Mayo Clinic³, there were 6 cancers in each of the first two portions of the duodenum and 3 in the third portion. The location incidence

of the growth in the group of cases which we publish here—the first time they have been cited—falls in this order: 5 in the first portion, 5 in the second (ampullary) portion, and 2 in the third portion. Our cases, taken from various sources, nearly duplicate the location sequence of the series from the Mayo Clinic. We imagine that the occasional difficulty in differentiating advanced cancer of the ampulla of Vater from primary duodenal cancer is responsible, in some degree, for the reported higher percentages of incidence in the second portion. On the other hand, cancers of the ampulla, as observed by Doctor Oscar Richardson⁵, "are small and confined usually to that region" and we would not expect them to show so complicated a structure as those of the duodenum.

More duodenal cancers have been found in men than in women. A small percentage have appeared in people under 40 years of age, the majority of them have occurred between the ages of 50 and 60. The reports of Perry and Shaw⁶ contain these limits of age: the youngest 37, the oldest 80. In the valuable case-report of Cabot⁷, the age was 79. In Morgagni's⁸ case, the age was 33. In the series that we publish the youngest (case No. 5) was 23†. Cancers of the lower bowel, on the contrary, have been found at all ages.

NORMAL AND PATHOLOGIC HISTOLOGY AND TERMINOLOGY

Chomel⁹, in 1852 when reporting a cancer of the third portion of the duodenum, observes that duodenal cancers are usually similar to those of the pylorus. This is a statement now frequently made by pathologists and we should expect this to be so because the cylindrical epithelial cells arranged in a single layer on a basement membrane are apparently alike in the secreting glands of the pylorus and duodenum. The structure of the glands of the pylorus and of Brunner's glands is the same. There is this variation in distribution, however, in that the cells, which form the glands of Brunner in the duodenum lie beneath the muscularis mucosae. Brunner's glands begin immediately below the pyloric ring and are found throughout the duodenum—they are numerous in the first portion and plentiful around the papilla of Vater from which point

*Sands in 1857 reported an ulcerated cancer of the duodenum and Reynolds¹⁰ in 1858 reported a cancerous tumor of the duodenum both in boys 18 years of age. Sands however gave no histological report and Reynolds appears not sure of his diagnosis.

†Sands. Ulcerated Cancer of the Duodenum. Nov. 5, 1857. Trans. of the N. Y. Path. Soc. 1856, Vol. I, p. 163.
Reynolds. Cancerous Tumor of the Duodenum. 1858. Trans. of the N. Y. Path. Soc. 1857, Vol. I, p. 2.

downward they decrease in number and disappear before reaching the duodeno-jejunal junction*. The lining of the duodenum, and of the entire intestinal tract, is formed of columnar—cylindrical—epithelial cells, except that by the excessive secretion of mucus, columnar cells may be transformed into goblet cells.

Primary cancers of the duodenum are cylindrical cell carcinomas growing from the mucosa or from Brunner's glands, and the cells of these new growths are generally arranged in such a way as to resemble the parent tissue. Some pathologists call these new growths destructive or malignant adenomata. Orth⁹ assumed that duodenal cancers had their origin in Brunner's glands, but Weecke¹⁰ contended against this idea. Some writers have suggested an origin from aberrant pancreatic tissue, and it may be difficult to differentiate some of the duodenal cancers from primary cancers of the pancreas. Evidences of a malignant growth are that the glands of the mucous membrane show irregular branchings and distentions of their ducts, and, particularly, that the gland cells appear beyond the membrana propria, and are found in the connective tissue below the mucous membrane. Bundles of these cells—some of them altered in shape—work into the deeper layers and are often so grouped as to imitate the glandular structure. Such a growth is called adenocarcinoma, or cancer. Also, *adenomata which are not malignant occur in the duodenum and other parts of the bowel, and usually cause no symptoms. These tumors grow by spreading out laterally or extending into the lumen of the bowel. If the adenomatous mass infiltrates or invades the surrounding tissue, it is a carcinoma.* We have found three forms of adenocarcinoma of the duodenum defined in writings on this subject: *scirrhous* cancer when the stroma of the growth becomes predominant and the mass is hard and fibrous, and contains few nests of cylindrical cells, *medullary* cancer when there are more cylinder cells than stroma, and the tumor is soft, and gray or red, and early ulcerates,—it is most malignant and metastases occur early, *colloid* or gelatinous cancer when the cells, in great degree, have undergone mucoid degeneration†. We have tried to have these statements conform, in a general way, to the opinions of Mallory¹¹, Ewing¹², MacCallum¹³, Schmaus and Ewing¹⁴, Ribbert¹⁵, and Gibbes¹⁶. Only a pathologist can define, in certain cases, to which type the growth belongs. Some reports state simply "adenocarcinoma", and some of the growths may have diverged too little from the

parent type to warrant further definition. With the present knowledge of the nature of cancer, recognition of these types of carcinoma would be almost of no clinical value. The essential thing is to learn early that cancer is present, and it must be seldom that enough preoperative evidence can be established to prove the type. Atkinson¹⁷, in 1895, when discussing intestinal cancer, including that of the duodenum, expresses what is apposite here. He says that "the presence of fragments of the new growths may sometimes be detected in the stools," and applies this especially to colloid cancer. Letulle¹⁸, however, in the report of his case of colloid cancer of the duodenum, makes no mention of finding this material in the feces, only that the stools had been bloody, and that "steorrhoea was not proved." On the other hand, not only did Charon and Ledeganck¹⁹, in their report in 1879, claim that these gelatinous tumors were diagnosed by the presence of colloid material in the stool, but, more extraordinary, that it may be found in the feces before the appearance of symptoms. The substance, they said, was insoluble in water, not precipitated by acetic acid, and presented bloody striae here and there. Adam²⁰ disapproves of the definition "colloid" cancer for that malignant growth of the mucous membranes, especially of the bowel, in which there is an active development of the mucous cells and the production of mucin. For a description of this type of tumor we refer to this author and to Adam and Nicholls²¹.

DO PEPTIC ULCERS OR THEIR SCARS INITIATE THE GROWTH OF CANCERS? OPINIONS

It has long been known that cancer may develop in an ulcer of the stomach. We find that Cruveilhier²² observed it, but it is said that he did not use the microscope, and the Fenwicks²³ assert that Cruveilhier was the first to publish this observation. Also, cancer of the duodenum may occupy the seat of a simple ulcer, or, even of an *actinomycotic ulcer*, as was reported by Rue del²⁴ of Jena in 1896. A few instances of cancer involving a simple ulcer of the duodenum are recorded and histologically proved. For example, Letulle¹⁸ states that the prodigiously large epithelial cells of the colloid mass had developed secondarily near the center of a large simple ulcer of the first portion of the duodenum, for which the patient had been treated about two years before. But such coexistence is most unusual, and it does not seem that duodenal ulcers, when we consider their frequent occurrence, have any part in the etiology of duodenal cancers. Further evidence for this belief is the fact that ulcers of the second portion of the duodenum are seldom found, while more cancers are found here than in the other parts. It appears, however, that the concurrence of duodenal cancer and ulcer, compared with the total number of cancers in the first portion of the duodenum, equals this incidence in the stomach if as many cancers were found in the duodenum as in the stomach,

*Lewis and Stohr state. The duodenum contains branched mucous glands or bodies which are found in the submucosa. These are called duodenal glands (Brunner's glands) and they occur nowhere else in the small intestine. (Lewis and Stohr. A Text book of Histology. 2nd edition. P. Blakiston's Son & Co. Philadelphia. Pp. 259 260)

†We have thought it worth while to repeat the definitions of these types as such classification seems practical for clinical purposes. Broders' classification of four grades according to the percentages of differentiated and undifferentiated cells present in the growth is undoubtedly the best method of determining the intrinsic malignancy of any tumor. (Broders. Collected Papers of the Mayo Clinic. 1925. Pp. 977 980)

we would find duodenal cancers occurring in simple ulcers as often as gastric cancers occur in gastric ulcers. This is our impression from examining reports. We have not attempted to collect statistics because we cannot be sure that all the published cases of primary cancer of the beginning of the duodenum had their origin there. A few of these may have been cancerous invasions from the pylorus or the pancreas, and in exceptional cases a pathologist may not be able to decide.*

The first thorough investigation to emphasize the very frequent occurrence of duodenal ulcer was a publication by Codman²³ in 1909. Evidence had already accumulated to prove that this lesion was common, so that Williams of England²⁴, in 1908, was able to contrast this fact with the rare occurrence of duodenal cancer, the inference being that, because of the relative infrequency of duodenal cancer to duodenal ulcer, it was highly improbable that ulcer had any causative relation to cancer. The Fenwicks²⁵ considered that "only about 3% of all cases of gastric cancer presented a clinical history or post-mortem evidence of previous ulceration." Altogether the supposed predisposition of ulcer to cancer has been the subject of much discussion. We review briefly the reports of the Mayo Clinic, the largest single source in the world, to show how this belief took root from apparent proof and in a few years was found untenable.

Mayo, W. J.²⁶, states that "in 54% of the 69 cases of cancer operated upon in 1905 and 1906, by Doctor Charles H. Mayo and myself, the clinical histories and pathological examination of removed specimens made it certain that the cancer had its origin in ulcer." Three times they had found cancer of the stomach developing upon the margin of a duodenal ulcer up to that time, "showing the susceptibility of the stomach to carcinoma as contrasted with the duodenum." The same author²³ in 1909, says that they had seen but four apparently primary carcinomas of the duodenum, and "in but one did it seem

*Codman, E. A. (a personal note) states "Duodenal cancers may not be so infrequent as statistics indicate as this reasoning shows. We must admit that cancers not infrequently involve the whole pylorus. In such cases it is impossible to determine at which side of the pyloric ring the cancer started. If it started on the duodenal side, it is likely that it would progress upward because the mucosa and muscular layers above it would be somewhat demoralized by both spasm of the pyloric muscle and stasis affecting the integrity of the mucosa. Therefore we cannot argue that, because more stomach than duodenum is eventually found involved the origin could not have been on the duodenal side of the pyloric line. The free drainage and absence of congestion of the mucosa below may have maintained the integrity of the duodenal edge and the march of the cancer in this direction have been slower than its progress upward. If this supposition were given weight at least half the pyloric cancers would then be considered as duodenal. It would greatly increase the ratio of duodenal to gastric cancer."

We think, however, this reasoning would not always hold. Cancer just below the pylorus usually encircles the gut like a wall often causing great dilatation of the duodenum above it even obliterating the pyloric sphincter yet the growth may not extend upward, as we noted in the cases of Haley²⁷ Jefferson and others. Jefferson's case is some evidence that the tumors may extend downward. At operation, the lesion was supposed to be a duodenal ulcer. At autopsy two years later the cancer began 2.5 cm below the pyloric ring and ended abruptly 2 cm above the papilla of Vater. In Pye-Smith's²⁸ unique case a probable primary cancer encircled the bowel just below the pylorus and there was a supposed secondary growth in the bowel 1/2 inches below.

probable that the cancer had developed on ulcer." Graham²⁹ reports, as proof for the hypothesis of the ulcer origin of cancer, that, up to 1904, they had demonstrated pathologically 18% of gastric cancers "had ulcer base." Adding this to their clinical record, he states that the evidence was fair that ulcer was the first cause of cancer in over three-fourths of the specimens, and, as a final word, "that ulcer is the great and fertile soil of cancer." MacCarty³⁰, in 1910, says that "71% of our resected specimens of gastric carcinoma were associated with ulcer, and 68% of our resected gastric ulcers were associated with cancer." Eusterman³¹ and Smithies³² in 1913, both add to these claims, and Wilson³³, in 1914, is emphatic in his statement that a thickened chronic scar over 1 cm in diameter holds the probabilities of cancer. Beckman³⁴, in 1915, makes this surprising statement "Primary cancer in the duodenum probably does not occur, when cancer does occur in the duodenum, it arises in the papilla of Vater or has invaded the duodenum from the stomach." We are sure the author would not have asserted this today with the further evidence that has appeared, no one would refuse to believe that cancer of the duodenum occurs. Carman³⁵, in 1915, reports the observation that malignant ulcers in their gross characteristics and roentgenologic appearances are not different from benign ulcers, but that a niche 3 or 4 cm broad is a suspicious feature in connection with an ulcer. Again, in 1921, Carman³⁶ describes the two types of malignant ulcer. In one type, both the border and the floor of the ulcer contain cancerous tissue in abundance, always malignant, probably, and in the other cancer is found in the margin but not in the floor of the ulcer. Both types, and the gradations between them, are now familiar to most clinicians and to all pathologists.

It is more than twenty years since the Mayo Clinic first declared that ulcer is the common source—"the fertile soil"—of cancer. This claim was accepted as a dogma by large numbers of the medical profession. Now, as an antithesis to past opinions of the Mayo Clinic, MacCarty³⁷, in a recent paper, states "Many of our profession do not differentiate the things which are of purely scientific interest from those which are of practical importance. No one should state positively that cancer arises in chronic gastric ulcer until one experimentally produces chronic gastric ulcer and produces cancer in the ulcer, and then shows that all of the conditions of the experiments are comparable to the conditions which arise in human beings." Touching especially the duodenum, Judd³⁸ also adds that there is little to show that cancer may develop from simple ulcer.

There may be no value in discussion of this subject at all, since views on the nature of cancer are all hypothetical. We add a guess, only, that the association of ulcer and cancer is an accidental occurrence, and that benign ulcers do

not invite the growth of cancers.* We cite this very remarkable instance where a cancer did not develop on a chronic ulcer but apparently established itself below one.

1927 Man 27 Apr 7 entered hospital with history that 2 years before he had pain and discomfort 2 hours p c and at that time, at Boston City Hospital, had a cholecystectomy for gallstones, and 15 months later operation for ventral hernia, but the same symptoms persisted. *Gastric analysis* free HCl 5, total acidity 50. *X-ray* showed narrow antrum as in carcinoma ulcer not seen. *Operation* Partial gastrectomy—Billroth II. *Path report* Two lesions—lower one, an indurated carcinoma, not ulcerated, upper one on lesser curvature, a gastric ulcer with beginning carcinoma along one edge (1927 Peter Bent Brigham Hospital M G, S28559. We thank Doctor Robert T. Monroe for calling our attention to this case and for the abstract of the record.)

This dreadful disease, following its hateful bent, seems only to choose a benign ulcer as a partner of convenience.

CASE HISTORIES

We give, first, the history of our patient, the operative disclosures on two occasions, and the pathological descriptions of the cancerous portion excised from the duodenum. The pre-operative account is from notes taken by Doctor Dewis. Subjoined are 12 other cases, abstracted from hospital records, and published here for the first time.

Authors' Case

CASE No 1

History August 3 1926 A man, 59 years old sail and awning maker. Born in Chiff of Scotch parents who died at ages of 80 and over. 2 brothers lost at sea. One sister living, knows nothing of her health. Never sick until now except that he was shipwrecked 40 years ago and was in the water of the Gulf Stream six hours supporting himself on wreckage and bearing on his shoulders an eight year old boy. In a hospital 5 months recovering from this exposure. Soon after, had an attack of acute urethritis (?). *Habits* Liquor occasional drink tobacco chews and smokes tea or coffee none.

Symptoms Stomach trouble began abruptly 2 months ago. He has lost 26 pounds in weight,—he now weighs 150 pounds usual weight 185 pounds. He complains of distress in the pit of the stomach belching heartburn and vomiting. *The vomit* is sour or bitter never green sometimes brown but 'no blood'. All food disagrees. Often in the early morning he is awakened by distress in stomach and vomits food eaten the day before. Bowels constipated. *Stools* no blood observed, and never black. He has no appetite, is weak and short of breath. He is failing fast.

Physical Examination Essential positive points in the examination are these. He is a muscular man, 5 ft 10½ in tall a little pale, his collar large clothes loose. Tongue coated—chews tobacco—edges clean teeth sound some gingivitis. Blood pressure, 108/72. *Abdomen retracted, not tender* right upper rectus tense to right of navel, a small mass is felt which moves with respiration gastric peristaltic waves are

observed passing from left costal border downward to right.

Laboratory Data One of two urinary specimens showed a trace of sugar. Hb 82, wc 7,400, rc a little irregular in shape and size. Blood Wassermann not made—no reason to suspect a luetic history. *Feces* not obtained. *Stomach contents* aspirated 3½ hours after midday meal of milk, crackers and blueberry pie. Only 35 cc of yellow brown liquid with drawn—tube plugged with berries and food specimens did not foam, no odor of sarcinae, no fecal odor. *free HCl* 0 *total acidity* 60, *occult blood* strongly positive. *Mic ex* Muscle fibers (he had eaten no meat in 48 hours and vomited twice in this time), few long bacilli, no sarcinae. The next day *stomach contents* obtained after a fast of 18 hours. *free HCl* 0, *total acidity* 100, motile bacilli and groups of staphylococci, red blood cells meat fibers (We regret that no test for bile was made, bile ought to be found in the stomach in the more exceptional cases of duodenal obstruction below the papilla of Vater. We did not think of cancer of the duodenum.)

Comment A diagnosis of pyloric cancer was made because there had suddenly appeared in a man 60 years old, always well before, a high degree of gastric stasis, and the analysis of the stomach contents showed no free hydrochloric acid. The absence of sarcinae is some proof that free hydrochloric acid was continuously wanting. There was urgent need for abdominal operation, so that X-ray examination was not advised and especially because barium in the stomach might interfere with the operative procedure.

Operation August 4, 1926 patient entered the Brooks Hospital. August 6, 1926 abdominal operation by Doctor George W. Morse. A cursory examination showed nothing abnormal. The pyloric ring appeared normal, and admitted the tip of the index finger. On the anterior, inferior surface of the duodenum, entirely below the pyloric ring was a puckered scar, 2.5 cm in diameter, with an inflamed and indurated border which had the aspect of an inflamed wall of a non-malignant ulcer. The gall bladder and upper abdomen were normal. No glands were felt. *Diagnosis* Chronic ulcer of the duodenum. A posterior gastro-jejunostomy was made with a short loop. More radical treatment seemed not advisable. Wound closed without drainage. There was no vomiting following operation, and recovery was rapid. On August 28 he was discharged from the hospital with no symptoms and gaining flesh—weight 150 pounds.

Laboratory, X-ray, and Clinical Notes Before leaving hospital, *stomach contents* showed no free HCl. *Stools* showed blood by benzidine and by guaiac. After leaving hospital he was seen frequently because the original diagnosis of cancer was being weighed against that of ulcer. He had no symptoms, gained weight and strength and worked. *Occult blood* persistently increased in the stools. This, with help from the study of reports of duodenal carcinomas convinced us that the ulcer in our patient was really cancer. On October 18 2½ months after operation, re-admitted to the Brooks Hospital. He weighed 160½ pounds and appeared well. Hb 81%. *X-ray* examination was made with the report that the stomach was normal in size and position, and emptied well through the new opening and a little through the pylorus. 'There was a filling defect in the region of the pylorus such as could be produced by chronic ulcer or early new growth. Otherwise no abnormality seen in the small or large bowel. Liver and gall bladder areas negative. Again stomach contents showed no free HCl.'

Second Operation October 21 1926 Pylorus found normal. Pyloric ring admitted finger tip. In the first part of the duodenum clearly distal to the

*The occurrence of a benign duodenal ulcer below the growth in the case of the non-ulcerative scirrhus cancer reported by Maclaure and Alice Durrleux¹² could not be cited as an instance for proof of this. The correct objection would be made that the cancer probably preceded the ulcer.

pylorus and at the site of what at previous operation appeared to be a simple ulcer there was found a discrete firm mass about 2 cm in diameter involving the anterior and inferior surfaces of the duodenum it felt and appeared to be malignant. The inflammatory thickening about the area previously noted, had diminished. The first part of the duodenum and the pylorus were removed leaving a good margin of healthy tissue between the clamps and the growth. The patient made a good recovery and was discharged with no symptoms on Nov 8 1926.

Pathological Examinations The specimen of the

Through an oversight a Wassermann test was not done until December 13, 1926. A strongly positive reaction was reported and the patient was placed on proper treatment.

Doctor Slack made the following report. Following the positive Wassermann test sections of the tissue were stained by Levaditi's method, but no treponema were found.

Slides stained by the hematoxylin eosin method and others with the Levaditi stain were sent to Doctor James Ewing, Department of Pathology, Cornell University who reported as follows:



FIGURE A Peritoneal site of cancerous lesion

removed portion of the duodenum and pylorus was sent to the Sias Laboratories, Brooks Hospital. Report of Doctor Francis H. Slack.

November 8 1926. Section of specimen from G. L. S. showed:

Gross Pyloric end of stomach and duodenum about 4 cm in diameter with the lumen of the duodenum occluded by a tumorlike growth. On section the tumor is of firm gray tissue and makes up about two-thirds of the total thickness of the specimen.

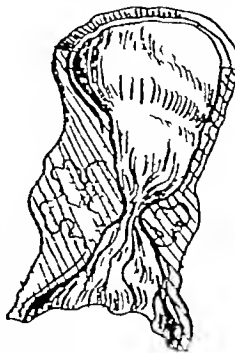
Microscopic examination shows the fibrous tissue of the duodenum invaded by epithelial cells supported by a dense connective tissue stroma. In places these cells have distinct alveolar arrangement, mitotic figures are present indicating rapid growth, differentiation is not sufficient to indicate their origin.

The mucosa of the duodenum is in places completely eroded; in other places the surface glands are partially eroded and there is an infiltration of the Brunner's glands with lymphocytes and eosinophiles. There are also occasional collections of pus. Where the mucosa is present, the tumor cells are not found to invade it, but appear immediately beneath Brunner's glands.

Diagnosis Adenocarcinoma of the duodenum, scirrhous for the most part but growing rapidly in places.

The above statements were confirmed by Doctor Frank B. Mallory, of the Pathological Department, Boston City Hospital.

January 14 1927. The section of tumor of the duodenum in the case of Mr G. L. S. shows an infiltrating adenoma malignum becoming adenocarcinomatous in the deeper portions. I find no indications of any complicating syphilis. The sections do not show any definite proliferation through the wall of the gut, but the whole muscular coat is split up and therefore a passage of tumor cells beyond the wall of the gut is at least imminent.



Pyloric end

Growth showing relative size of lumen

FIGURE B

January 21 1928. Patient apparently in perfect health. No digestive symptoms. Appetite good. Bowels regular. Wt 174½ lbs. Hg 85%. X-ray of lungs normal. Stomach contents deeply bile stained.

no free HCl, no occult blood Feces gualac, negative benzidine, slightly positive Wassermann, Dec 24, '27, doubtful

No 2

Cancer of 1st Portion

1901 Woman, 23 Admitted to hospital with pain in epigastrium which had existed for 4 years It ex

nant disease This portion was removed by a narrow margin Specimen examined by Dr William Whitney The report reads A small tumor from the stomach* which showed muscular tissue markedly hypertrophied and infiltrated with a new growth of epithelial tissue in small islands and with a distinctly glandular formation The lymph nodes showed no infection Diag, adenocarcinoma There

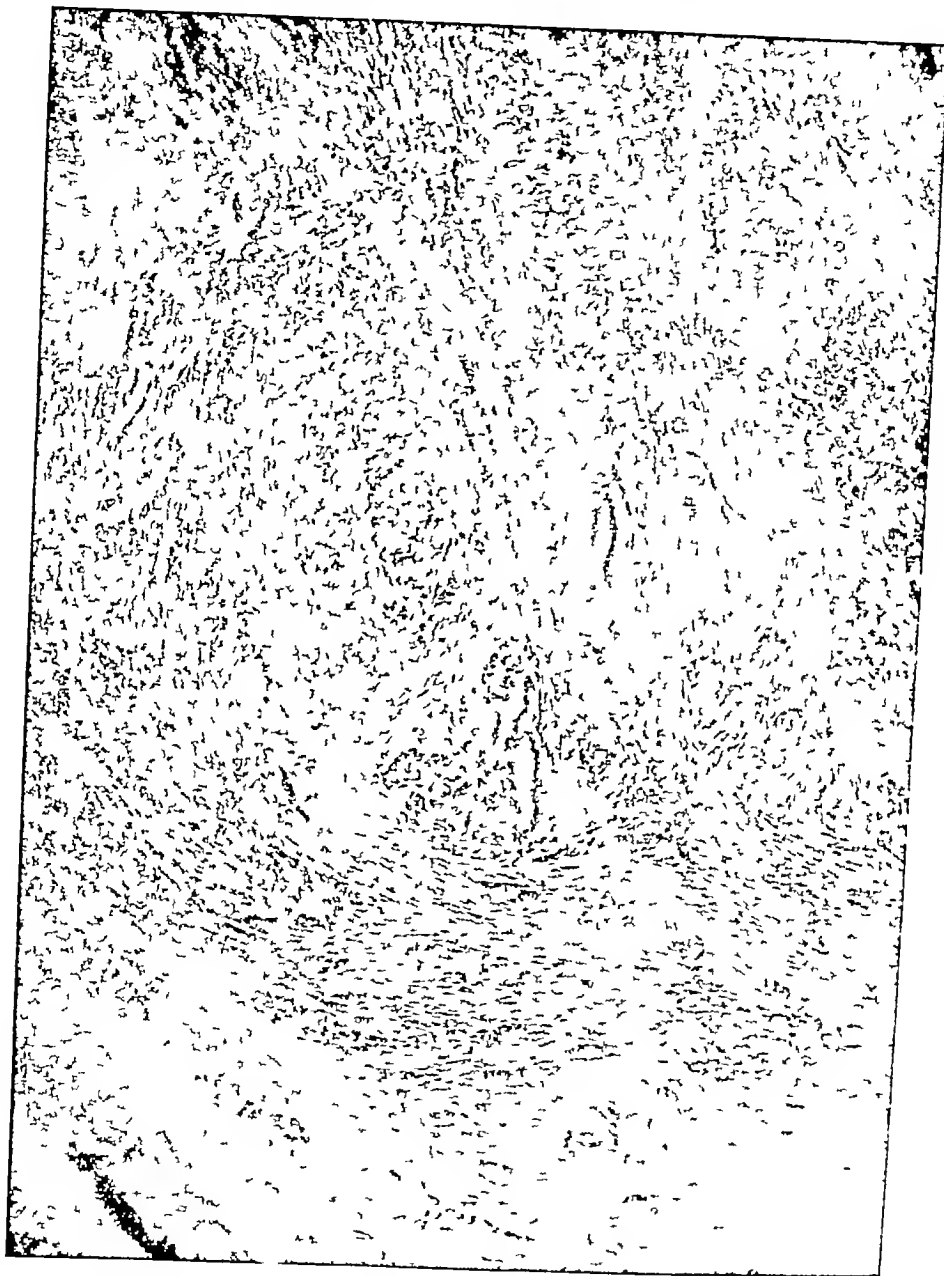


FIGURE C Showing scirrhus type of carcinoma

tended through to the back, and had no relation to food There had been frequent attacks of jaundice *Ol diag*, gall bladder disease Operation by Dr Maurice H. Richardson Gall bladder normal but just beyond the pylorus there was found on the anterior surface of the duodenum a hard whitish patch the size of a ten-cent piece which resembled malign

is no record of her condition since she was discharged from the hospital (1901 Massachusetts General Hospital West Surg Vol 369 p 178)

*We include this case because being familiar with the certainty in observation of this master surgeon we are sure that his statement was correct and the pathologist's report of the tumor's location a slip of the pen

No 3

1st Portion

1906 Woman 27 Admitted to hospital first time March 27, with epigastric distress belching vomiting poor appetite constipation, shortness of breath and palpitation P.E negative No gastric analysis Diag acute indigestion. Discharged April

edema Blood Hb 30% r.c. 1312 000 w.c. 10 000 Stools guaiac positive No gastric analysis Patient grew worse and died Jan 19 1907 Autopsy 25 cm beyond pyloric ring was a mass 25 cm. in diameter which projected slightly above surface Sectioning revealed mass 5x3.5x3 cm which occupied all intestinal wall and was adherent to head of pancreas without involving its ducts gall bladder



FIGURE D Showing relation of carcinoma to Brunner's glands in lower left corner

2 1906 Dec. 5 1906 admitted second time Symptoms progressive weakness for preceding two months 6 days before entrance fell to floor because of sudden weakness Vomited after meals 2 days before entrance. Had severe headaches was very short of breath on climbing stairs and obliged to rest every 3 stairs P.E negative except for pallor and pretibial

edema Liver showed metastatic nodules Muc. E., tumor involved all layers of wall and was composed of irregular cords of cells with some tendency to alveolar arrangement. No invasion of pancreas but some increase of connective tissue (1906 Boston City Hospital Case No 221 726 and No 228 302 Autopsy No A-0722)

No 4

1st Portion

1920 Woman, 61 Admitted to hospital Feb 2 with a history that about once a year over a period of eight years, she had attacks of epigastric pain which passed through to back and to both shoulder blades and which was relieved by hot tea Nausea and vomiting had persisted throughout the last year, usually at night, sometimes after meals The vomit consisted of the food as eaten, sometimes of brown stuff In the last 4 months pain and soreness accompanied these spells, and also some jaundice appeared No loss of weight *Urine* dark *Stools* "clay-colored," blood by benzidin, *P.E.*, well developed and nourished jaundiced *Abdomen* full and soft, with slight resistance in right upper quadrant Feb 4, operation *Stone*, size of marble removed at ampulla of Vater Wound drained Post operative recovery poor, and Feb 10 patient died *Autopsy* Half way between pyloric ring and ampulla of Vater was an indurated ulcer 3.3 cm in diameter Base was thickened, edges firm No metastases except to falciform ligament and adjacent lymph glands *Mic E*, carcinoma with columnar epithelial cells infiltrating the muscle layers There were numbers of mitotic figures *Pancreas* normal (1920 Boston City Hospital Case No 399 343 Autopsy No A 20 38)

No 5

1st Portion

1921 Man, 50 Admitted to hospital Nov 21 with epigastric distress and soreness, much belching and vertigo Symptoms appeared 2 hours p.c., lasted an hour, and were relieved by soda or more food Also, for 25 years, had recurrent periods of stomach distress and belching Otherwise F.H. and P.H. unimportant. *P.E.* Teeth bad tongue coated, tenderness in epigastrium 1 in. to right of median line Hb 75%, w.c. 8,300, neutrophils 59% *X-ray* and *cl diag*, ulcer of first portion of duodenum Nov 26, operation Omentum, pylorus and duodenum united in a firm mass and adherent to liver and gall bladder Duodenum mobilized an ulcer of its upper surface close to pylorus was excised by Heincke-Mikulicz operation *Specimen Anat diag*, early adenocarcinoma of duodenum An irregular rounded segment of mucous membrane and muscle 1.6 cm diameter, near the center of which is an oval area of ulceration 0.6x0.4 cm Edges are dark red sections show distinct penetration of muscle by glands growing in an atypical manner Nov 30 patient died (1921 Mass Hom Hosp Surg Service Case No 133, 690)

No 6

2d Portion

1911 Woman 42 Admitted to hospital Sept 11 with jaundice, epigastric pain nausea and vomiting which had existed for six months *Feces* black at first later clay colored *Cl diag* not given *Operation* There was found a distended gall bladder with thickened ducts and supposed to be carcinoma Gall bladder drained The patient died immediately following operation *Autopsy* Marked icterus, and carcinoma of the duodenum with occlusion and marked dilatation of the common and hepatic bile ducts Common bile duct ended blindly in region of papilla of Vater *Section of the duodenum at this part* showed a rosette-like mass The base of the depression was smooth and gray and rested over the lower part of the head of the pancreas into which it radiated for a little way as tough gray homogenous tissue This process had sealed off the common duct, but that of Wirsung was free and passed beneath the

mass Pancreas not remarkable *Mic Ex* Carcinomatous tissue the irregular shaped cells of which occasionally formed tubules and were present chiefly, if not exclusively, in the wall of the duodenum The pancreas showed fibroid change, in places and the liver, degeneration of cells (1911 Mass Gen Hosp West Surg 187 217 Autopsy No 2923)

No 7

2d Portion

1915 Man 50 Admitted to hospital, March 22 with anorexia, vomiting and epigastric distress which bore no relation to eating Symptoms began with flatulence in December 1914 a month later daily vomiting of small amounts foul, and without blood Bowels constipated *P.E.* He was emaciated and cyanotic his skin dry and hard Teeth bad *Abdomen* scaphoid large peristaltic waves of stomach extending over whole abdomen no masses, no free fluid *Gastric lavage* produced a large bucket full of yellow fluid, twice the amount introduced Free HCl 0 t ac 40 lactic acid present Boas Oppler bacilli present, no blood Blood (Hb 80 r.c. 4½ m w.c. 8,000 *Cl diag*, pyloric stenosis from new growth March 26, operation Posterior gastroenterostomy April 9, second operation to relieve obstruction from kinking April 11 patient died *Symptoms for three and a half months Autopsy* (excerpt) In the duodenum, 10 cm from pyloric ring, near head of pancreas, was an annular growth 4 cms in diameter associated with thickening of all the walls Above the growth duodenum dilated pyriform and at the pyloric ring measured 12 cms in diameter *Stomach* tremendously dilated and hypertrophied, its mucous membrane pale edematous and rugae nearly effaced *Pancreas* no gross lesion *Liver* weighs 1700 gms smooth, firm mottled, partly cyanotic, and large hepatic ducts dilated *Mic Ex* Duodenal growth reported "as being made up of a thin connective tissue stroma which divides irregular shaped alveolar spaces into large areas The alveolar spaces are partly filled with large polyhedral cells with rather poorly staining protoplasm and oval or round nuclei *Anat diag* Adenocarcinoma with obstruction (1915 Royal Victoria Hospital Montreal, Can Personal communication from Prof Horst Oertel Strathcona Prof of Path, Path Inst, McGill Univ We are indebted to Dr Thomas Malone Trois Rivières Quebec for reference to this case)

No 8

2d Portion

1921 Woman 50 Admitted to hospital Feb 17 with epigastric distress and pain after food Symptoms began 5 months before entrance and grew worse Constipation no hematemesis no bloody stools F.H. and P.H. unimportant except that left breast removed on account of a tumor *P.E.* Teeth and gums diseased *Abdomen* lax, tender in left upper quadrant no masses Hb 30% w.c. 7,800 neutrophils 61% *Feces*, blood present *X-ray report*, ulcer in lesser curvature of stomach disease of gall bladder and appendix *Cl diag*, cholecystitis and peptic ulcer Feb 25 blood transfusion Feb 28, operation Adhesions between pylorus and distended gall bladder Cholecystectomy—200 small stones in gall bladder No ulcer of stomach or duodenum found March 3 patient died *Autopsy Anat diag* carcinoma of duodenum immediately above papilla of Vater (1921 Massachusetts Homeopathic Hospital Surg Service Case No 126 907 Autopsy No 21 15)

No 9

2d Portion

1921 Woman 56 Admitted to hospital April 2, with the history that for years patient had suffered

with attacks of abdominal pain and vomiting and in August 1915 an X ray was taken at Boston City Hospital with the diagnosis of a diseased appendix. Three days before entering the hospital her condition became bad because of abdominal pains and vomiting. On entrance her stomach was found full of brown fluid and extended into the pelvis. Gastric lavage and stimulation given but patient died without operation. *Cl diag* gastric carcinoma acute gastric distention and tetany. April 4 autopsy. *Anat diag* adenocarcinoma of duodenum with obstruction, metastasis in liver, dilatation of stomach of bile ducts and duct of Wirsung. The pylorus duodenum below the mass intestines gall bladder pancreas and spleen were all normal. In the wall of the duodenum extending from the ampulla of Vater to the middle of the third portion beneath the root of the mesentery was an elongated oval area of tumor like tissue with a depressed, crater like center. The thickness of the growth varied from 5 mm in the center to 1 cm at the epipharynx. At one point there was a more marked depression from which extended a minute fistulous tract into a scarred and depressed area in the adjoining mesentery. (1921. Mass Gen Hosp East Med 242 275 Autopsy No 4190)

No 10

2d Portion

1927 Man (negro) 30 Admitted to hospital Sept 11 with this story. Well until July 1—6 weeks before entrance—when he became weak and dyspnoeic and had a little diarrhea. Aug 1 he went to bed with pain in right upper quadrant which radiated to lower front of left chest and was increased with inspiration and relieved by chest swathe. From this time he had loss of appetite difficulty in swallowing solid food distention of belly and swelling of legs. The pain in r u q was worse half an hour after eating and was relieved by a hot plate. It was accompanied sometimes by nausea and vomiting. The vomit was a thin green liquid mixed with food just eaten. He lost 50 pounds of weight in 2 months. P H Appendectomy 4 years before 9 months later (3 years before) gastro-enterostomy for gastric ulcer located on lesser curvature 2 cm above pyloric ring. P E Edema of eyelids fluid in right chest, abdominal distention nodular mass extending from right iliac crest into r n q and pitting edema of legs. X ray of chest negative of g i tract showed patent stoma and irregular duodenum with hypermotility of small intestine. Hb 40% r b c $3\frac{1}{2}$ m w c 22 400. Sept 15 patient died. Autopsy Primary carcinoma of duodenum located 2 cm below ampulla of Vater 4x4 cm in diameter. Extensive metastases to liver to lymph glands and to peritoneum. Liver weight 4 000 gms. (1927 Boston City Hospital Case No 546 709 Autopsy No A 27 288)

No 11

3d Portion

1913 Man 63 Admitted to hospital April 23. In August 1912 he began to have abdominal pain with vomiting cramps and gradual loss of 30 pounds in weight. P H In 1900 Kraske operation for removal of malignant adenoma of rectum. He then continued well for 11 years. *Cl diag*, anemia carcinoma of jejunum and cholelithiasis. April 23 operation. Stomach and duodenum large but pylorus normal. On turning back omentum there was discovered a malignant annular stricture of the jejunum where the gut emerged through the meso-colon. Posterior gastro-enterostomy was made. Patient died. Autopsy. *Anat diag* carcinoma of duodenum with obstruction. Duodenum not dilated except just proximal to region where it passed through the meso-colon. At this point it was abruptly reduced to the size of a

lead pencil. This stricture was the result of a new growth like tissue 2.5 cm long and 5 mm thick, which encircled the entire wall of the intestine. The upper and lower margins of this mass were lip like and the mucosa between them presented a number of denuded areas. Cross section of the tumor exhibited a firm homogeneous surface of a gray white color. Below the duodenal constriction, the entire small and large bowel revealed nothing remarkable except that no traces of the previous operation on the rectum were evident. The gall bladder contained about 500 small stones. Bile ducts pancreas and retroperitoneal glands were not abnormal. The specimens for some inexplicable reason became unavailable. (1913 Mass Gen Hosp West Surg Vol 809 p 79 Autopsy No 3182)

CASE 12

3rd Portion

1917 Man, 55 Admitted to hospital Feb 19 with the story that 3 mos before he began to have attacks of epigastric distress but not pain 2 to 4 hours after a big meal. He was relieved only by vomiting and there had been 12 to 15 such attacks. No blood observed in vomit or stools. Years before had had an untreated venereal sore and for a year he had been troubled with dull shooting pains numbness and tingling in arms and legs. P E entirely negative save for irregular left pupil with poor reflexes absent gag reflex and achilles jerk. Lab data Wassermann negative both blood and spinal fluid. Hb 75% w c 7 600 11 200 23 000 smear normal. Urine Albumin very slight trace sugar 0 few hyaline casts and white blood cells. Stools blood 0 to ++++ with benzidine. Gastric contents fasting 36 and 62 test breakfast I 40 and 68 II 30 and 44 III 8 and 40. Patient steadily failed with rising white blood count, and died in coma 3 weeks after admission. Autopsy. *Anat diag* carcinoma of duodenum at duodeno-jejunal flexure with obstruction and dilatation of the stomach metastases to regional lymph nodes old healed tuberculosis of lungs chronic nephritis broncho-pneumonia acute splenic enlargement. The tumor was an annular cancer of the gut, 3 cm in width. Its margins were greatly elevated especially the distal side. The base of the ring was ulcerated and at one point the ulceration had extended through the bowel wall and invaded the surrounding fat. *Hic er* adenocarcinoma with base of strands nests and alveoli of epithelial cells of irregular arrangement mostly polygonal. Numerous mitotic figures no round cell infiltration and relatively little stroma. —Nov 21 1927 this is the only case of primary adenocarcinoma of the duodenum found in the records of the Peter Bent Brigham Hospital. All the others were those of the papilla of Vater or extension from other organs. (1917 Peter Bent Brigham Hospital M 6464 Autopsy A 17 21 We are indebted to Doctor Henry A Christian for permission to cite this case)

Note All the cases in this series were adenocarcinoma and the microscopic sections in a majority of them are available for inspection. Also we considered the aspects which may have some force against the classification that we have given cases No 2 5 and 6—in No 2 the discrepancies of statement in No 5 the gross description of an inflammatory lesion which militates somewhat against the pathological report and in No 6 the uncertainty supported by the expression that the carcinomatous tissue was present chiefly if not exclusively in the wall of the duodenum—still we believe the main facts warrant this use of data.

The following case may have been a recurrence of the cancer of the papilla and therefore we cannot include it in our list though it may have been cancer primary in the duodenal wall.

CASE A

2d Portion

1913 Woman, November, 1908, operated upon for gallstones following six months of pain and jaundice. At that time, small mass, size of a pea, found in the papilla of Vater which obstructed the common duct. This excised (?) and common duct joined to duodenum. Sept 25, 1913, readmitted with epigastric pain, vomiting, and loss of weight dating from July. *Fasting gastric contents*, 32 ounces green color. *Free HCl* + occult blood by gualac 0. *Mic E* starch and free fat, no sarclinae. *Test meal* *Free HCl* 31, *tac* 62, occult blood by gualac, 0. *X-ray* revealed a large, atonic stomach. *Diag.*, ulcer of the duodenum. *Operation*. Pylorus was normal, but stomach was much dilated and also upper portion of duodenum which was covered by adhesions. In the 2nd portion of the duodenum, where the papilla of Vater was formerly, there was found a solid tumor the size of a hickory nut. There was a growth in the liver. Posterior gastro-enterostomy made with the diagnosis of carcinoma of the second portion of the duodenum. Patient died later. No autopsy (1913 Mass Gen Hosp East Surg Vol 630, p 177 No 191414).

CASE B

Junction of 1st and 2nd Portion

1922 Woman 67. In Aug 1921, nausea and burning sensation in stomach, occurring one half hour after meals, appeared and persisted. In Feb, 1922, there were added severe epigastric pains, a feeling of distention, marked constipation, weakness, steady loss of weight, and finally much vomiting. *P Ex*, nothing abnormal except tenderness in upper abdomen, and still very fat. *Lab data* *Normal HCl* in stomach contents, stools, blood positive with guaiac, urine, negative. *X-ray* (Massachusetts General Hospital). Considerable 24 hour residue, and almost complete obstruction of the second portion of the duodenum probably from malignant disease arising in pancreas. May 8, operation by the late Doctor John T. Bottomley. 'The stomach, the pylorus and the first and second portions of the duodenum greatly distended. At the junction of the first and second portions of the duodenum was a hard, nodular mass twice the size of an English walnut, apparently of the duodenum. No adhesions. Gall bladder contains numerous stones otherwise normal. Liver normal. One enlarged gland in region of mass. Adhesions between posterior layer of meso-colon and stomach. Posterior gastro-enterostomy done with difficulty. Gall bladder not disturbed. Great relief from operation. No vomiting, no stomach symptoms following the operation, but she gradually wore out and died May 22, 1922. There was no autopsy.' (From private records of the late Doctor John T. Bottomley. We are indebted to Doctor A. McK. Fraser and to Mrs. Bottomley for the privilege of reporting this record.)

DISCUSSION OF CASES

The clinical record of our patient is unusual and instructive by itself, but, in order to draw the clinical outlines of duodenal cancer, it has seemed practicable to analyze this case (No 1) in comparison and contrast with the others we publish here and with those found in reports.

Abrupt Onset of Symptoms. The first statement in the history, the abrupt appearance of indigestion followed by vomiting and loss of weight in a healthy man of 60, is of great importance. It suggests cancer. We thought it

indicated pyloric cancer. In the future we should consider that cancer of the lower end of the stomach seldom reveals its encroachments by such rapid onset of symptoms. Cancers of the duodenum develop symptoms suddenly in about one-half of the cases, and we find it the rule in the types that are annular and constricting. It occurred in cases No 1, 2, 3, 6, 7, and especially 11 and 12. Such treacherous hiding of symptoms until the disease is far advanced is well illustrated in the case published by Hamilton³⁹ of Dublin, Ireland, in 1847. The cancer in his patient occupied the first part of the duodenum, there was "obstinate vomiting," and the woman, aged 58, was well up to within five weeks of her death.

Perforations of Cancerous Ulcerations of the Duodenum, preceding any Symptoms of Cancer or Ulcer. The following report is the first description we have found of duodenal cancer. It duplicates the anatomical account of our case (No 1), and, no doubt, would have produced a similar history had not a perforation of the bowel caused sudden death. The history, because of its priority and excellence, deserves a full transcript, though we give here the merest excerpt. Hamberger⁴⁰, in 1746, gives an account in Latin—a good exemplar for any day—of a "scurrhus" of the first part of the duodenum, the ulcerated portion of which had perforated into the large peritoneal cavity.

A woman servant at 8 a. m. on October 6, lifted a full basket of plums to her shoulder, carried it to its destination and on returning home toward evening complained of severe pains in her abdomen. The following morning her abdomen was swollen, she had fever, and by evening was dead. After this there was further abdominal distention and, because of the uncommon features of the sickness and death of a woman in apparent health, a judicial section was required. On opening the abdomen there was an explosion of air, not fetid, followed by yellow liquid admixed with white particles. Dissection of the duodenum disclosed a scirrhus ring about four lines ($\frac{1}{4}$ inch) in breadth and about six lines from the pylorus. In this ring was a round depression about four lines across which communicated with the peritoneal perforation. The bowel was not obstructed anywhere. The liver was described as scirrhus (metastases?), but no evidence that the pancreas or other structures were affected by the growth. There were careful details of the successive steps in the examination and there was, also, a discussion of the various phases of the case.

We believe the case described by Peck⁴¹ was like Hamberger's. Peck operated twice upon the same patient, with a year's interval, for perforated duodenal ulcer. At the second operation, there was found a deep ulcer containing a small cancer which had perforated at the site of the first perforation. He thought cancer had developed in the interval, we believe the ulcer of the first perforation may have been cancerous. In cases 9 and 12, the cancerous ulceration had penetrated the bowel wall and extended into the surrounding tissues.

We ought to notice here, while giving priority to Hamberger's report, that the experienced prosector Mediavina gave an account of a cancer of the first portion of the duodenum to Morgagni in early October, 1733, the time of the incident, but Morgagni did not publish this until long afterward. An excerpt of portions of Article 12, which is relevant to our paper follows:

A Capuccin monk died at the age of 33 as a result of various morbid conditions but vomiting and dropsy were stated. The belly contained two pints of water. The liver was enlarged of a white color and the lobules conspicuous. The pancreas was hard and the spleen enlarged. The stomach showed nothing worthy of mention. In the duodenum at the distance of an inch below the pylorus was a blackened area and just below this a scirrhus. The father of pathological anatomy comments here upon the character of the vomiting being the same whether the obstruction is located in the duodenum or at the pylorus.

Cancer without Ulceration. We usually expect to find blood in the stomach contents with obstructive duodenal cancer and nearly always in the feces whether there is obstruction or not. The exception, when blood is not found in the stools is important. The scirrhus form of cancer does not always exhibit ulceration and this statement applies to other portions of the gastrointestinal tract. We have noted as instances of *non-ulcerative cancers*, the scirrhus cancers of the duodenum reported by Jefferson¹ and by Maclaure and Alcee Durrieux². In the case of the latter, however, there was an ulcer below but having no connection with the dense mass which involved the muscular tunic in the region of the ampulla of Vater. Ulcerated cancers of the gastrointestinal tract are so general that we should be on our guard for the rare exceptions.

Dilatations of Stomach and Duodenum. Obstructions and Other Causes. The stomach was not much dilated in our patient but large amounts of gastric distention often develop when cancers of the duodenum cause obstruction as in cases No 7, 9, 11, and 12. Also, in Haley's patient³, with a scirrhus of the first portion of the duodenum, the stomach was immensely dilated, and this was noted in similar cases reported by Cavla⁴, Markoe⁵, Chomel⁶, Geiser⁷, and others. When vomiting appears early in the course of symptoms of duodenal obstruction, gastric and duodenal dilatations may not occur. It may be suggested that frequent emptying of the stomach prevents enlargement. Probably this is not the whole explanation. Such an instance appears in one of the two cases reported by Whittier⁸.

A man 66 had symptoms of vomiting, loss of strength, and constant desire for food beginning one year before death. At post mortem there was found a smooth rigid gristle-like tumor about five inches long involving all the coats of the first and descending portions of the duodenum. The canal was almost completely obstructed yet, the stomach was not appreciably dilated.

When vomiting is a deferred symptom, there

is sometimes great dilatation, so that the boundary between the stomach and duodenum has been found wholly obliterated by this process of distention. The stomach and the portion of the duodenum above the growth may form one large cavity. Such an instance is described in another case reported by Whittier⁸.

A man 33 had symptoms of indigestion, nausea, and great discomfort appearing one year and a half before death. In the last 6 months he began to vomit enormous quantities containing bile. The vomitus looked as if Paris green had been mixed with it. At post mortem the stomach and duodenum above the obstruction were found greatly dilated and the line dividing the stomach and duodenum could not be marked out. A fungoid annular growth acting as a valve completely obstructed the bowel 8 inches below the pylorus. Water would not pass from above but pencil could be pushed through from below.

The early symptoms in the second example might have been consistent with simple ulcer, but with the onset of vomiting bile appeared indicating that the obstruction was below the ampulla of Vater.

In Mason's case⁹ only the duodenum above the cancerous obstruction was described as dilated, as it was in Jefferson's case¹ where the duodenum between the obstruction and the pylorus was twice the normal size. We have also observed this result in cancerous invasion of the duodenum from the pancreas and we assume that the secretion of the mucosa between the duodenal block and a resisting pylorus is able to distend the bowel. It has been pointed out by Turner¹⁰ that if intestinal secretion has no free outlet its pressure may be great enough to rupture the gut. We refer further to a report by Montgomery and Sherman¹¹ of an enormously distended stomach associated with a scirrhus cancer of the duodenum 2 inches below the pyloric ring, but, in the minutely described and notable case, the bowel was not obstructed and the pylorus was normal. The stomach completely overlapped the liver, contained dark acid fluid, and had thin and friable walls. The writers were "convinced that the distention of the stomach was a simple dilatation from its walls being too weak to resist the pressure of the contents." We wonder if, in many cases, dilated stomachs are not dependent upon some slow-working process, systemic poisons, similar to the cause underlying acute dilatation. The patient, in this case, was a deaf mute. He could not relate his symptoms in words and we digress to repeat the perfectly clear account he gave of vomiting. "He doubled his fist tightly, and describing circles from a point rather low down in the right hypochondrium, moving rapidly upward and to the left until he reached the precordial region, then shot his fist quickly up the line of the esophagus, ended by making a vomiting motion with his mouth and throat."

Two Cancers occurring in the Bowel at the Same Time. More than one adeno-carcinomatous growth of the gastro-intestinal mucosa is very seldom discovered, and, when found one is

generally supposed to be a primary growth and the other or secondary growth to depend for its origin on the first. Pye-Smith⁴¹ reported two adenocarcinomatous growths in a duodenum, and questioned whether the lower of the two masses in the bowel had developed by means of direct transference or grafting. The upper cancer formed a complete circle about the gut just below the pylorus, the larger growth was located 3 inches below it. Coumont and Lannois⁵² report the coexistence of cardiac and duodenal cancer. Coffey⁵³ of Oregon, in February, 1927, removed from a patient the upper half of the colon and lower 3 feet of the ileum for an adenocarcinoma directly in the cecum and another in the ileum one foot from the ileocecal valve. Whether or not it is possible for two such growths to appear simultaneously in the bowel, without causal relation, is suppositional.

Diverticulum, a Location for Cancer. Diverticuli of the duodenum are generally inoffensive. A diverticulum, however, may be the seat of cancer as reported by Morrison and Feldman⁵⁴; a mass, the size of a walnut, was found at the mouth of a tubular pouch, one inch by $2\frac{1}{2}$ inches, filled with a clear fluid, which arose from the duodenal cap. There were metastases in the liver, and the pancreas was invaded. The X-ray picture represented a flattened cap and an irregular second portion of the duodenum. A diagnosis of probable cancer was made.

Gall-bladder and Liver Complications. Primary cancers of the second portion, or ampullary region, are not so rare, considering all reports, as cancers of other portions of the duodenum. McMeal⁵⁵, Boxwell⁵⁶, Berry and Cockle⁵⁷, Butz⁵⁸, Chauffard⁵⁹, the Majors, and others have reported cases of primary carcinomata of this region, and in our series there were five cases. We will not attempt to review, here, the multiplicity of complications which usually arise early when the growth is located in this part, but only to mention that there occur great distentions and, also, obliterations of the biliary and pancreatic ducts, as found in case 9, and dilatations and atrophies of the gall-bladder in addition to suppuration and perforation of this organ. In the case of McMeal⁵⁵, in 1835, the gall-bladder was enormously distended and contained stones, and all the neighboring structures were invaded by the cancer. Boxwell's case⁵⁶ furnishes an example of metastases advancing to remote organs while sparing those near the origin of the cancers, carcinomatous nodules were scattered throughout the lungs, but there were none in the liver. Intense jaundice is a usual accompaniment of cancer of this area, as in case 6, but the complications naturally expected do not always occur. As an exception, we found in the report of Coumont and Lannois⁵² that the mushroom shaped cancer of the duodenum was exactly at the level of the papilla of Vater, yet the duct of Wirsung and bile duct were open, and there was no jaundice. The can-

cer in the esophagus in the same patient obliterated its lumen. Later stages of cancer of any portion of the duodenum produce the same terminal invasions and symptoms. Coupland's case⁶⁰ illustrates the way in which a primary cancerous ulcer, just below the pylorus, may cause obliteration of the gall-bladder and cystic duct, great dilatation of the hepatic ducts and fatal jaundice. The author remarked that he had failed to find any case on record (1879) in which fatal jaundice had followed disease of the common duct so near its origin. From Rolleston⁶¹ we know that primary cancers occur at the junction of the common and hepatic ducts.

Gerster⁶², in a very similar case to that of Coupland⁶⁰, made a diagnosis of obstruction of the common duct caused by stone. The operation revealed a gall-bladder filled with stones, which was removed. A post-mortem showed that a duodenal cancer had invaded the bile ducts. In Cabot's report⁶³, the pre-operative diagnosis and surgical findings were like those of Gerster, only the autopsy revealed in this case a cancer lower in the duodenum. Rolleston⁶¹ states that *gallstones, associated with biliary stasis by cancer, are less common than from other causes* in indicating that biliary stasis has little to do with the formation of the stones. In Chauffard's case⁵⁹, the jaundice disappeared before death, because the obstructed common duct again communicated with the duodenum by means of cancerous ulceration.

Invasion of the Pancreas. Cancerous invasion or infiltration of the pancreas from the duodenum may be extensive without the exhibition of serious symptoms unless the growth occludes the ducts of Santorini and Wirsung. When these ducts have been closed, which may result from a very small growth, serious disturbances show themselves: offensive, fatty diarrheas, with wasting of the patient. There is often great atrophy of the pancreatic tissue. As examples. In Jefferson's case³, the pancreas, as a whole, was enlarged, but it revealed large retention cysts, great fibrosis, and the glandular tissue was reduced to a minimum, yet the Islands of Langerhans could be found and there was no glycosuria. In Letulle's case¹⁸, the pancreas was shrunken to the size of the thumb. In discussing this case, Pillet said that he had examined a series of cases of atrophy of the pancreas and had been impressed by the resistance of the pancreatic acinus to the stiffening by the sclerosis which was indicated in Letulle's case. In a very much atrophied pancreas—one reduced to a fibrous tract—he said one still finds acini which can be recognized.

Palpable Tumor, Flattened Abdomen. We have noted, in the majority of physical examinations, the infrequency with which tumor masses have been felt in cases of duodenal cancer. Whether the tumor is fixed or slightly movable would aid little in determining the

growth's location in the duodenum. The doubtful tumor which was felt in our patient was probably not the cancer. Also in a great percentage of reported cases, the abdomen was flat or retracted and we should expect this.

Importance of making Analysis of the Stomach Contents. Gastric analysis may be a very valuable aid in differentiating duodenal cancer from ulcer. We have never seen a simple duodenal ulcer coexistent with continuous absence of free hydrochloric acid but this is the rule with duodenal cancer. In our case—No 1—the history and examination alone warranted a diagnosis of cancer, but this was confirmed by the absence of free hydrochloric acid in the stomach. The gastric analysis in case No 7 was similar. That this is the general rule is shown in these reports. Ewald⁶ found no free hydrochloric acid in the stomach contents of his case though a cancer had become embedded in the scar of an ulcer 2 cm below the pylorus. We think this important especially because the cancer was stated to have appeared in a simple ulcer. Like results were reported in six of the cases tabulated by Eusterman, Berkman and Swan¹ the cancer growing in the first portion of the duodenum in three, in the second part in two and in the terminal portion in one of the cases, the remaining cases are examples of much diminished free hydrochloric acid or a low normal percentage—20—except in one case of abdominal carcinomatosis with cancer of the terminal duodenum the free hydrochloric acid was mid-normal—27. Other laboratory reports of published cases conform to these analyses. The importance of testing for bile in the gastric contents is also indicated in Rolleston's replete account⁶⁴ of a cancer of the third portion of the duodenum. In this case there was no free hydrochloric acid in the large amount of dark offensive vomitus, but there was bile. It was this finding of bile in the absence of abdominal distention that enabled him to decide that the obstruction was in the small bowel below the outlet of the bile duct. The symptoms of this patient with bile in the vomitus were like those described by Lacaze⁶⁵ in 1852. In the post mortem—a woman aged 64—there was found a cancer of the third portion of the duodenum and the stomach and duodenum, above the tumor were much dilated. In the case of Pve-Smith⁹¹ also, the dark vomitus, with fecal odor and the presence of bacilli, contained no free hydrochloric acid. In definite obstruction of the duodenum, the gastric contents are undoubtedly modified by the backing-up of the secretion of the bowel, and also by bile and pancreatic juice when the constriction is below the papilla of Vater. In Clark's case⁶⁶ of colloid cancer of the lower ileum no free hydrochloric acid was found in the stomach the result probably, of admixture of gastric with intestinal contents. We think it will be found, later that the can-

cerous condition directly governs this phenomenon in some degree. In our patient, the area of duodenal mucous membrane between the pylorus and cancerous constriction was very small, and any secretion by its alkalinity could scarcely influence a large volume of gastric residue. We are convinced that the absence or even diminution from normal of free hydrochloric acid militates against the question of benign duodenal ulcer.

On the other hand, a large amount of free hydrochloric acid in the stomach contents seems compatible with cancer of the duodenum as instanced in cases 12 A and B, and we quote as confirmation the case of Czigan⁶⁷ he reports a large free and normal combined hydrochloric acid content in the stomach, and operation located a cancer in the first portion of the duodenum. Skillern⁶⁸ reports a free acidity of 45, total acidity of 65, with a cancer of the duodenum, pylorus, and pancreas. We should all know this exception applies in gastric cancer. Benedict⁶⁹ found it to be so in his patient who died two months following the onset of symptoms. The partial autopsy revealed a pyloric cancer the size of a butternut, which apparently had its origin in the base of a broad duodenal ulcer.

Lactic acid, when found in the absence of hydrochloric acid in the stomach, may contribute somewhat toward a diagnosis of cancer, it is noted in case 7. In Aaron's case⁷⁰ of colloid cancer of the duodenum, which began 4 cm below the pylorus and extended down to the common duct, there was no free hydrochloric acid, and no sarcinae or Oppler-Boas bacilli, lactic acid was present, and also pepsinogen and rennet zymogen. A determination of the bacteria in the gastric contents, with the limited exception of sarcinae, has little value in differential diagnosis. And we repeat for emphasis, that when sarcinae are present in the stomach contents of chronic gastric stasis, we also find free hydrochloric acid, but free hydrochloric acid is usually not present in this condition when sarcinae are absent.

Close Resemblance a Duodenal Cancer may bear to Simple Ulcer. In some cases, the clinical diagnosis of cancer, in conjunction with that of the roentgenologist, is supported by the disclosures at operation or the pathological examination, as in case 9, or a diagnosis of ulcer is made and cancer found, as in case 8. At the first operation on our patient—case 1—there appeared a good surgical reason for dissenting from the clinical diagnosis. We had made a diagnosis of cancer of the pylorus with obstruction, and were much surprised to find, on the duodenal cap, a puckered scar which felt and looked like that of benign ulcer. The scar which had a diameter of 2.5 cm., was rather large for a non-malignant ulcer but the bases of simple ulcers may have larger diameters. It was diffi-

cult to adjust a diagnosis of benign ulcer to the results of the clinical and laboratory investigations,—it could hardly be done. The doubt that lingered led to further study, a definite diagnosis of cancer of the duodenum, a second operation, and, we hope, a cure. (The whole proceeding evinced such fallibility, on the doctors' side, and such faithful assurance on the part of the patient and his friends, that we shall not soon forget the lesson.)

The decision for a second operation was governed much by a study of reports of duodenal cancer, but the progressive increase of blood in the stools was the deciding influence. The bleeding of simple ulcers is rarely constant and after gastro-enterostomy generally lessens or ceases. A bleeding intestinal cancer always bleeds. The history of sudden symptoms of obstruction in a well man of sixty is strong evidence of cancer. We have never known a latent chronic and benign ulcer to do this, or to produce constant pylorospasm. The error we made had a precise parallel in this brief account.

Jefferson's case. A man, aged 55, previously well in the fall of 1911 began to suffer with epigastric pain followed by vomiting. At first, he vomited once or twice a week, at the last it was daily, in the beginning the amounts were small but later large. He lost weight. His doctor advised operation, and he went down from Alberta to Victoria, British Columbia, where he had performed a gastrojejunostomy by a "well known and an experienced surgeon" of that city. The writer says that the hospital records state that a duodenal ulcer was found and the surgeon informs me that it was to all appearances an ordinary non-malignant lesion. After this the patient put on flesh, vomited no more, returned to the prairie, and was in excellent health for two and one-half years. Toward the end of 1913 he began to lose weight and strength, and in December, 1914 a diarrhea set in and continued until his death in April 1915. Doctor Jefferson first saw the patient in February, 1915 when he returned to the coast to regain strength. He was "merely skin and bones" obviously in the last stages of malignant disease and had lost twenty-four pounds in eight weeks. He had not vomited once since operation. He died of exhaustion. There is no record of gastric analysis. The stools were abundant, pale, fatty and offensive such as are found in diseases of the pancreas not like those of enteritis. A post mortem disclosed an obstructing annular, columnar-cell carcinoma of the duodenum. It began 2.5 cm below the pylorus and ended abruptly 2 to 3 cm above the bile papilla. Above the growth the duodenum was widely dilated but the pylorus was normal. The growth was not ulcerated but smooth and white with no sign of preceding simple ulcer. The tumor extended into the upper aspect of the enlarged head of the pancreas. The ducts of the pancreas were dilated. No probe could be passed into the duct of Wirsung, and the papilla of the duct of Santorini was obliterated. The pancreas contained a number of intercommunicating cystic cavities, and its tissue was reduced to a minimum.

Difficulties in Differential Diagnosis. Jefferson believed that the cancer in his patient had been engrafted on a simple ulcer base, and we quote in full what he says because it sets forth points for discussion in these cases. "It

may be argued that the case was one of carcinoma from the outset, and that at the operation it was seen in its early stages before its malignancy could be recognized. Although this is very plausible, I do not think that such was the case, and for this reason. He was operated upon for gastric stasis only a few months after he had begun to suffer from indigestion for the first time. Now, if it was a duodenal cancer from the outset, it is remarkable that it should have been large enough to have produced food retention, and yet be mistaken at operation by an experienced surgeon for a simple ulcer. Equally it is peculiar that a duodenal ulcer of about four months' standing should cause stenosis, for in the early stage gastric hypermotility and rapid emptying is the rule, as radiographers have taught us. The probabilities are, it seems to me, that he had had a latent duodenal ulcer for some time, and that it was not until it began to cause duodenal stasis that he suffered any distress and began to vomit."

We believe that the lesion in Jefferson's case may have been a carcinoma from the outset, for, as our case proved, an early stage of cancer may accurately simulate a simple ulcer and yet produce gastric stasis. The delay in occurrence of symptoms was *not* too long after the operation, we think, for the original lesion to have been cancer. We have found nothing in the history of the subject to indicate that cancer of the duodenum, intrinsically, is rapidly fatal. If there is obstruction of the bowel, or extensive invasion of the pancreas and liver or their ducts, the patient soon dies. Cancer of the duodenum develops at the same rate, probably, as a similar growth in the stomach, but in the duodenum cancers seem not to metastasize early in their growth. When a small scirrhous tumor blocks the bowel just below the pylorus, and the obstruction is corrected by a gastro-enterostomy, there are chances that the patient might live for three or four years. We observed an instance where this type of cancer attacked the stomach there was no obstruction, greatly increased transmission of food, and the patient lived, with little pain, nearly four years after the beginning of symptoms. This type of cancer is sometimes labeled "limitis plastica." *The invasion of a scirrhous cancer is slow.** It is known, as Jefferson says, that a duodenal ulcer in the early stage does not produce permanent gastric stasis, and we can hardly coincide with this supposition that a duodenal ulcer may cause definite obstruction three or four months after the first symptoms. Jefferson further remarked that "it may be argued," and we do argue that his case was one of carcinoma from the outset. We base this statement on cases No. 1, 2, 3, 4, and 5, and, especially because vomiting was an

*This however has no relation to the inherent malignancy of the growth. Scirrhous cancer would probably be found in Grades 3 and 4 of Broders' index the more malignant forms.

early symptom, on the reports of Hamilton³⁹, Haley⁴³, Cayla⁴⁴ and those of others quoted in the paper. Jefferson states that the cancer ring was 2.5 cm. below the pylorus, with no evidence of pre-existing ulcer. We think that the lesion and its appearance at operation, in his case, were very similar to that in our case and others which we have quoted. We are indebted to him for his excellent article and fine illustrations.

Primary Cancer of the Second Portion and of the Papilla of Vater. Cancers in the first portion of the duodenum do not produce the early complications they cause when found in the ampullary region, but in the later stages, regardless of the location, all the contiguous structures may be invaded and metastases occur in various parts of the body. There appears to be this difference, between primary cancers of the duodenum and those of the papilla of Vater, that *cancers of the papilla seldom obstruct the bowel*. The symptoms of biliary obstruction, of course, are the same in either case. In certain cases, recollection that the papillary cancers rarely block the gut may be some aid in differential diagnosis. The cases of Pilliet⁴¹, Hall⁴², Hanot⁴⁵, and Ely⁴⁶ are some examples of cancer of the papilla. Obstructive jaundice existed in all these, which we quote, yet we notice this variation in the condition of the pancreas that it was small in the case reported by Pilliet, as it was in Letulle's⁴⁸ case, already mentioned, that only a portion of the pancreas was affected in Hall's case, and that in the cases of Hanot and Ely, the pancreas was normal. This is some evidence that, in cancerous obstruction of the common duct, we need not always anticipate serious changes in the pancreas. We were impressed with the account that Hall gave of the *ruptured end of a bile duct in the left lobe*. There was found a large retro-peritoneal cavity filled with bile that surrounded the left kidney. Biggs, in commenting on Hall's paper at the time it was read, said that, two years before, a specimen had been presented showing a ruptured bile duct of the left lobe resulting from a stone in the common duct, and, also, that others had observed, in similar cases, that the ducts of the left lobe of the liver were those which were most dilated, but the reason had not been explained.

Syphilis associated with Cancer of the Duodenum. In our patients, syphilis came to mind in the differential diagnosis only to be disregarded. It was thought unlikely. The urgency for exploratory abdominal operation forced to the background all but the most common tests. Again, through an oversight following the first operation, a blood Wassermann was not made. We thought it had been done. It was a matter of surprise, some time after the second operation, to find that the test had not been made at all. The positive result, then determined, caused us no little concern until further exam-

inations of the pathological specimen proved that no spirochetes were present and no gumma. This oversight was probably fortunate for the patient, otherwise it is more than likely that we would have applied therapeutic tests and other treatment when an immediate operation was needed. Later we observed this title "*Cancer du Pylone d'Origine duodenal chez un Syphilitique*," a report by Curtis and Surmont⁴⁷. The account is elaborate and instructive, and we find it particularly appropriate to notice that, while the patient's digestive troubles seemed positive enough to require surgical treatment, they postponed operation because they considered a positive Wassermann warranted tentative specific treatment. This was begun on October 8, 1921, at first with apparent improvement, and continued nearly to the time of operation on January 13, 1922. The patient died on the following day. It was not definitely decided whether this adenocarcinoma with mucoid transformation had its origin in the duodenum or not. The essential point for our use is that the authors indicate the operation came too late because of the specific treatments.

At the present time, the differentiation of syphilis from cancer of the bowel, in borderline cases, is quite impossible. The determination by tentative treatment is untenable unless the condition is inoperable. Already much has been written on gastro-intestinal syphilis, including that of the duodenum. Mortimer⁴⁹, in a short, clear article, has stated the salient facts and methods of treatment, and reviewed some of the best work on the subject. He states that "syphilis of the intestinal tract may develop within the first few years of infection though in hereditary lues the symptoms have been known to manifest themselves after a lapse of twenty-five years." Syphilis of the stomach has been diagnosed as carcinoma of the pylorus. The fundamental anatomical changes in both syphilis of the duodenum and of the stomach are identical. Intestinal gummata are found less seldom in the jejunum and ileum than in the duodenum. Stenosis of the bowel may develop from cicatricial contraction of an encircling ulcer resulting from necrosis of a gumma. The syphilitic ulcerations we have observed in the stomach were serpiginous. Oertel⁵⁰ states, "As regards syphilitic infections of the gut, apart from congenital syphilitic lesions, their localization in the small gut is even more common than in the large intestine, in which—principally in the rectum—primary or tertiary gummatous lesions are occasionally found. The recorded instances of syphilis in the small gut appear to predilect the upper parts, in contra-distinction to tuberculosis. There, nodular swellings with subsequent indolent ulcerations and flat bases have

Dewis. Aids in the Diagnosis of Surgical Conditions of the Stomach with Especial Reference to the Characteristic X-ray Appearance of the Syphilitic Hour glass. In Contrast to those of Simple Ulcer and Cancer. Can. Med. Ass'n. Journ. December 1915.

been described, and, as in a case which I observed, cicatricial stenoses. Characteristic is their perivascular arrangement and the involvement of the blood vessels themselves. A few cases have been reported with annular constriction, and therefore simulating cancers." The X-ray appearance in duodenal lues has characteristic value in differentiating syphilis from cancer, as we have noted it in gastric syphilis. But X-ray examination would be impossible in cases similar to ours, and, whatever the diagnosis, duodenal stenosis requires exploratory abdominal operation, probably gastroenterostomy. A mere question of malignancy indicates resection of the part.

The Totals of Duodenal Carcinomata. We have made some effort to examine the available writings on the subject of primary duodenal carcinomata, but have not attempted to determine the total of reported cases. McGuire and Cornish⁷⁸ in 1920 estimate, from a collection of hospital reports of the world, that 50 duodenal cancers were found in 151,201 autopsies,—about one duodenal cancer to 3,000 autopsies. These authors also report two cases of cancer in the first portion of the duodenum. Nagel⁷⁹, in his article on this subject, says that "undue prominence should not be given these unusual conditions." We agree with this statement—though prominence can do no harm,—and also with his belief that a knowledge of rare lesions forms an essential supplement to a thorough understanding of the diseases of any organ, and is useful in the practice of surgery.

Additional Case Reports. Concurrent with the study of reports by writers already quoted, we have examined the following. Vickers⁸⁰ reports obstructive cancer of the duodenum at its junction with the jejunum, gastroenterostomy. Williams⁸¹ in 1855 gives a report of an unusual and instructive case. Among other symptoms, his patient was jaundiced, post mortem section revealed an obstructing, walnut sized cancer of the duodenum below the papilla of Vater; the duodenum above the growth looked like a second stomach, occupying the normal position of the transverse colon, the pylorus, however, was normal as was also the liver. The author in his comments explained the jaundice by absorption of bile from the contents of the immensely dilated duodenum. Deserouille's⁸² case showed enormous distention of the stomach which contained 15,000 grams of coffee like material. Guéneau de Mussy's⁸³ case was a cancer of the duodenum with dilatation of the stomach and duodenum. Forgue and Chauvin⁸⁴ quote a case by Hoft⁸⁵ and make an elaborate analysis of the subject and résumé of many articles, but their own case was a round-cell sarcoma of the duodenum and they also quote cases and discuss this subject. Peaudelur⁸⁶ reports a primary cancer of the duodenum which had no clinical signs to establish findings at autopsy, and Disque⁸⁷, in his paper, speaks especially of the differential diag-

nostic worth of the test for occult blood. Hirschel's⁸⁸ account of an operation to relieve obstruction of the common duct is valuable, he removed a gall-bladder filled with pus, a section of the duodenum in which was located a tumor of the papilla of Vater, the size of a walnut, and also a piece of the pancreas. The cut portion of the pancreas with its duct was drawn into, and the common duct implanted in the bowel. The final step of the operation is skillfully indicated by drawings. The patient recovered and lived a year. The account is somewhat similar to that of case A. Lichty⁸⁹ publishes an interesting paper, but not any of the six cases were qualified as primary cancer of the duodenum. Syme⁹⁰ reports a cancer of the third portion of the duodenum, resection, cure. Geiser⁴⁰ gives an account of duodenal cancers, two of the third and one of the fourth portion. Pic⁹¹ in a general review of this subject quotes Bard⁹² who presented a case of primary epithelioma of the glands of Brunner. The case of Herz⁹³, hard growths in duodenum, 6 cm. below papilla of Vater, and that of Baillet⁹⁴, death from obstruction of duodenum by cancer, are both instructive accounts. The inaugural dissertations of Gunther⁹⁵ and Warmburg⁹⁶ are excellent contributions to our subject. Each reports a case and makes comparisons with other reports, and both consider especially the subject of diagnosis. Gunther gives particular attention to laboratory evidence. Dickinson⁹⁷ reports a sarcoma of the duodenum which extended from the pylorus to the jejunum with constriction midway. The description resembled that type of cancer, less seldom found in the stomach, where this organ is converted into a rigid tube through which a barium meal is seen to pass as rapidly as through the esophagus. Head⁹⁸ describes a cauliflower type of carcinoma which he found in the third portion of the duodenum. The ante-mortem diagnosis was duodenal ulcer with cancer superimposed. The free hydrochloric acid in the stomach contents was above normal. Crane⁹⁹ of Kalamazoo, Michigan, reports a case of circular cancer of the duodenum below the papilla. Free hydrochloric acid was present in amounts below normal. X-ray plates, after a barium meal, showed gastric stasis and a dilated bulb, but the cancerous lesion was not demonstrated. Later, the patient was operated upon at the Mayo Clinic by Doctor William Mayo. Bloch's¹⁰⁰ report gives a clinical diagnosis of cancer of the duodenum, in which a gastroenterostomy was done, the X-ray had reported gastric carcinoma. Herman and von Glahn¹⁰¹ report a case of carcinoma of the supra ampullary portion of the duodenum. Bibby and Stewart¹⁰² publish a very interesting case of a constricting primary carcinoma of the first portion of the duodenum with a secondary growth in the common duct, there was also present a duodenal diverticulum, $\frac{3}{4}$ inch in depth, which admitted the tip of the little finger. Patel and Grange¹⁰³, while they do not report any new case, discuss fully the various causes of duodenal obstruction.

and give a good bibliography of the subject up to that date. Spillmann¹⁰⁴, in 1882, reports a case, in a man aged 49, of duodenal carcinoma at the level of the ampulla of Vater the annular constriction admitting the little finger. The cancerous ulceration had formed a communication between the duodenum and the common bile duct. The history states that the patient had been sick a few weeks and was brought to the hospital showing pronounced icterus. The stools were colorless, but later became almost normal. It was believed that the flow of bile was shut off by the invasion of the cancer at first but was re-established by ulceration. Wurm¹⁰⁵, in 1902, reviews the literature, discusses the cause of duodenal carcinoma and publishes two cases of the first portion a constricting carcinomatous ulcer of the superior, horizontal portion causing gastric stasis, and a carcinoma between the descending and upper horizontal part of the duodenum with stricture and dilatation above. Bove¹⁰⁶ reports an ulcerated cancer of the first portion of the duodenum in a woman of 64. The symptoms of increasing pain, anorexia, and vomiting existed for about four months. The stools were at first black and became colorless, and a tumor was felt. Schrotter¹⁰⁷ reports a case of a man 68 who died of medullary cancer of the duodenum. He had been much jaundiced, but had no vomiting. The post-mortem disclosed a carcinoma on the base and margins of a round ulcer of the duodenum in its free descending portion with secondary growths in the right pleura. Also, there was present on the lesser curvature of the stomach four fingers' breadth above the pylorus, a round ulcer the size of a "Kreuzer" coin.

Summary Our opinions on the subject of duodenal carcinomata, based on the study of cases reported in this paper and of those published by others, are stated here.

1 Duodenal cancers occur usually in the sixth decade of life. The youngest patient recorded as having this disease was 23.

2 Cancers of the duodenum probably develop independently, and little evidence is found that they ever arise in pre-existing benign duodenal ulcers.

3 Obstructive symptoms of duodenal cancer are more rapid in onset than those of pyloric cancer.

4 Primary cancer of the duodenum usually obstructs the gut, primary cancer of the papilla of Vater seldom blocks the bowel.

5 Abrupt appearance of gastric stasis in a person of middle age suggests cancer of the duodenum, and absence of free hydrochloric acid in the stomach confirms the diagnosis. A combination of these two facts of history and laboratory evidence is not compatible with the natural history of simple ulcer of the duodenum or of pyloric cancer.

6 Bile will be found in the gastric contents

when the duodenal constriction is below the ampulla of Vater.

7 Blood is present in the stools in cases of cancer of the duodenum. An exception would occur in the rare cases of scirrhus cancer, without ulceration,—only two cases were noted.

8 Perforation of the bowel at the site of a cancer of the duodenum may cause the first symptoms observed. An apparent example is the first case recorded—Hamberger's in 1746.

9 Perforation of a duodenal ulcer, occurring in the absence of chronic symptoms of indigestion, is suggestive of cancer, especially in a patient of 60 or over.

10 Metastases, in duodenal cancer, are probably not found in large percentages of cases. In our small series of 12, metastases occurred in 3 cases—an incidence of 25% (There was invasion of regional lymph nodes in 2 other cases).

11 Syphilitic ulceration and cancer of the duodenum may present symptom complexes and laboratory data hardly distinguishable by present methods. When cancer is suspected in a patient, whose blood or spinal fluid shows positive evidence of lues, operation should not be long delayed for therapeutic tests.

12 Gummata rarely occur in the duodenum, not so rarely in the jejunum and ileum.

13 X-ray may aid in the diagnosis, particularly in the absence of obstruction.

14 It may not be possible, at operation, to distinguish simple ulcers from early cancers of the duodenum. It is safer to excise the lesion, if the clinical diagnosis is cancer, especially if free hydrochloric acid is absent in the gastric contents.

BIBLIOGRAPHY

- 1 Eusterman, Berkman and Swan. Collected Papers of the Mayo Clinic and the Mayo Foundation. W. B. Saunders Co. Phila. and Lond. Vol. xlii. 1925. Pp. 70-90. Brill. Primary Cancer of the Duodenum. A. J. Med. Sc. 1904. New Series. Vol. cxxviii. Pp. 824-837.
- 2 Jefferson. Carcinoma of the Suprapapillary Duodenum. Casually Associated with Pre-existing Simple Ulcer. Report of a Case and an Appendix of 39 Collected Cases. Brit. Jour. of Surgery. 1916. 1917. Vol. iv. No. 14. Pp. 299-306.
- 3 Deaver and Rudin. Cancer of the Duodenum. A. J. Med. Sc. April 1920. New Series. Vol. clix. Pp. 469-477.
- 4 Cabot. Case Record No. 12073. Boston M. and S. Jour. Feb. 11 1926. Vol. xcix. No. 6. Pp. 267-270.
- 5 Perry and Shaw. On Diseases of the Duodenum. G. N. S. Hospital Reports. 1893. Vol. I. P. 214.
- 6 Morgagni (Medicinis case) de sedibus et causis morborum per anatomien indagatis. Libri quinque. tomus secundus. Epistola anatomico-medica xxx. 12. P. 10.
- 7 Chomel. Cancer du Duodenum. Gazette des Hopitaux. 1867. 25e Annee. No. 10. P. 3.
- 8 Orth. Lehrbuch der speziellen pathologischen Anatomie. I. Band. Berlin. 1867. S. 450.
- 9 Weeche. Zur Kenntnis des primären Duodenalcarcinoms. Klef. 1894. S. 1-2.
- 10 Mallory. Principles of Pathologic Histology. W. B. Saunders Co. Phila. 1914. Pp. 451-410.
- 11 Ewing. Neoplastic Diseases. W. B. Saunders Co. Phila. 1919. P. 641.
- 12 MacCallum. A Text Book of Pathology. W. B. Saunders Co. Phila. 1916. Pp. 972-957.
- 13 Schmaus and Ewing. Pathology and Pathological Anatomy. L. A. Broe & Co. Phila. and N. Y. 1902. Pp. 171-176.
- 14 Ribbert. Geschichtslehre für Ärzte und Studierende. Bonn. Verlag v. Friedrich Cohen. 1914. S. 417-427.
- 15 Gibbs. Practical Pathology and Morbid Histology. Lea Bros. & Co. Phila. 1921. P. 150 et seq.
- 16 Atkinson. Cancer and Lardaceous Degeneration of the Intestines. System of Practical Medicine. Pepper. 1895. Vol. II. P. 623.

- 18 Letulle Cancer colloids du duodénum développé sur un ulcère simple Bull de la Soc Anat de Paris 1897 5me Serie Tome XI Pp 721-723
- 19 Charon and Ledeganck Quatrième cas de dégénérescence colloïde de l'intestin observé chez une femme de 32 ans Jour de Méd June, 1878 Vol lxxvii Pp 493-499
- 20 Adami Principles of Pathology Lea & Febiger Phila and N Y 1910 Vol I Pp 804-889
- 21 Adami and Nicholis Principles of Pathology Lea & Febiger Phila and N Y 1911 Vol II Pp 457-459
- 22 Cruveilhier Anatomie Pathologique du corps humain 1829 1835 Tome I Liv x P 5
- 23 Fenwick and Fenwick Cancer and Other Tumors of the Stomach P Blackiston's Son & Co Phila 1903 P 216
- 24 Riedel Demonstration von Präparation Dünndarmcarcinom höchst wahrscheinlich entstanden auf dem Boden einer Darmactinomykose Verhand d Deuts Gesells f Chir Berlin 1895 4 Sitzungstag 30 Mai 1895 S 106 107
- 25 Codman On the Importance of Distinguishing Simple Round Ulcers of the Duodenum from those Ulcers which Involve the Pylorus or are Above It. Boston M and S Jour 1909 Vol cxi Nos x xi and xii Pp 313 351 and 399
- 26 Williams (of England) Natural History of Cancer Wm Ham Wood & Co N Y 1908 P 173
- 27 Mayo Collected Papers by the Staff of St Mary's Hospital Mayo Clinic 1905 1909 Pp 58 57
- 28 Mayo Collected Papers by the Staff of St Mary's Hospital Mayo Clinic 1905 1909 Pp 191 202
- 29 Graham Collected Papers by the Staff of St Mary's Hospital Mayo Clinic 1905 1909 Pp 50 57
- 30 MacCarty Collected Papers of the Staff of St. Mary's Hospital Mayo Clinic 1910 Pp 73 102
- 31 Eusterman Collected Papers of the Staff of St Mary's Hospital Mayo Clinic 1913 Pp 60 73
- 32 Smithies Collected Papers of the Staff of St Mary's Hospital Mayo Clinic 1913 Pp 74 97
- 33 Wilson Collected Papers of the Mayo Clinic 1914 Pp 141 157
- 34 Beckman Collected Papers of the Mayo Clinic 1915 Pp 194 203
- 35 Carman Collected Papers of the Mayo Clinic 1915 Pp 123 155
- 36 Carman Collected Papers of the Mayo Clinic 1921 Pp 9 25
- 37 MacCarty Collected Papers of the Mayo Clinic 1922 Pp 95 99
- 38 Judd Carcinoma of the Small Intestine Jour Lancet April 1 1919 Vol xxxix No 7 Pp 159 169
- 39 Humilton Malignant Disease of the Duodenum Jaundice Proceed of Path Soc. of Dublin. 1st Series 1840 1858 No 15 Art 14 Jun 15 1847 Pp 394 395
- 40 Hamberger (Georgius Erhardus) de ruptura intestinali duodeni Jenae 18 Decemb 1745 Disputat ad Hist et Curat Morbor Hallero Colligente Tomus III. Venetis sumptibus Haeredum Boglioni 1757 Pp 607 609
- 41 Peck Perforated Duodenal Ulcer Operation Second Perforation ut Same Site a Year Later (cancer found) Ann. of Surg 1910 Vol II P 952
- 42 Maucclair et Alce Durrieux Cancer du duodénum ayant provoqué des accidents d'occlusion intestinale Bull de la Soc Anat de Paris 1898 lxxviii Année 5me Serie Tome vii Pp 277 279
- 43 Haley Cancer of the Duodenum Pacific Med and Surg Jour 1873 Vol vii Pp 137 137
- 44 Cayla Cancer de la première portion du duodénum ath érome artériel Bull de la Soc Anat de Paris lvi Année 1881 4me Serie Tome vi Pp 214 215
- 45 Markoe Cancer and Ulceration of Duodenum Trans of N Y Path Soc 1876 Vol I P 265
- 46 Geiser Ueber Duodenalkrebs Deuts Zeit f Chir 1907 36 Band S 41 107
- 47 Whittier Primary Malignant Disease of the Duodenum Trans of Assn of Am Phys 1859 Vol IV Pp 292-301
- 48 Mason Growth at Orifice of Bile Duct Boston City Hospital Records (unpublished) Vol cckxiii p 26 Vol cckxv P 154
- 49 Turner The Dangers of Intestinal Excision Brit. Jour of Surg 1916 1917 Vol I Pp 227 233
- 50 Montgomery and Sherman A Case of Carcinoma of the Duodenum Occidental Med Times Sacramento 1890 Vol IV Pp 354 359
- 51 Pye-Smith Cancer of the Duodenum Trans of the Path Soc of London 1894 Vol xiv Pp 53 66
- 52 Courmont and Lannois Coexistence of cancer du cardia et de cancer du duodénum Mém et Compt rend Soc de Sc. Méd de Lyon 1893 1894 Tome xxxviii Pt. 2 Pp 197 198
- 53 Coffey (Portland Oregon) Cancer of the cecum and of the lower ileum (Personal communication April 27 1927)
- 54 Morrison and Feldman Carcinoma in Duodenal Diverticulum Ann of Clin. Med. 1925 Vol IV Pp 403 414
- 55 McNeal Cancer of the Duodenum Obstructing the Ductus Communis Choledochus etc No Am Arch of Med and Surg Sc Baltimore 1835 1838 Vol II Pp 157-150
- 56 Boxwell Exhibition of Specimens Lancet, London 1907 Vol II P 1657
- 57 Berry and Cockle Cancer of the Duodenum Suppuration and Perforation of Gall bladder followed by Fatal Peritonitis Med. Times and Gazette London. 1853 Vol I P 435
- 58 Butz Leber Duodenalkrebs und seine Komplikationen. Inaug Dessert Königl Univ z. Greifswald 1900
- 59 Chauffard Cancer duodénal prae-vatérien Jour de Méd. Interne xlvme Année 10 Septembre 1908 No xiv Pp 241 242
- 60 Coupland Cancer of Duodenum leading to Obstruction of Gall bladder and Cystic Duct and Partial Occlusion of Hepatic and Common Bile Ducts Fatal Jaundice. Trans. Path Soc London 1873 Vol xxiv Pp 103 108
- 61 Rolleston Diseases of the Liver Gall bladder and Bile Ducts W B Saunders & Co Phila N Y and Lond. 1905 P 684
- 62 Gerster A Case of Carcinoma of the Bile Ducts and Duodenum Proceed of N Y Path Soc New Series 1905-1906 Vol v Pp 139 143
- 63 Erwin Eln Fall von Atrophie der Magenschleimhaut mit Verlust der Salzsäuresecretion Ulcus carcinomatosum duodenale Berlin klin Woch 1885 23 Jahrgang S 527 531
- 64 Rolleston Carcinomatous Stricture of the Duodenum Lancet Lond 1901 Vol I Pp 1121-1124
- 65 Lacaze Extrait des procès verbaux Bull de la Soc. Anat. de Paris 1862 xxviii Année Pp 11 17
- 66 Clark Carcinoma of the Small Intestine Surg., Gyn. and Obs 1926 Vol xliii Pp 757 763
- 67 Cavigan Zur Diagnose des Carcinoma duodeni Archiv f. Verdauungskr Berlin 1898 Vol III Pp 82 86
- 68 Skillern Cancer of Duodenum Paucraes and Pylorus. Surg Clin of J B Deaver at the German Hospital in Philadelphia. Internat Clinics 1914 Vol III 24th Series Pp 155 248
- 69 Benedict (A L) Relative Hyperchlorhydria and Pyloric Obstruction due to Cancer Developing in Duodenal Ulcer Am Jour of Gastroenterology Sept 1911 Vol I Pp 12 15
- 70 Aaron Carcinoma of the Duodenum Phila Med Jour 1899 Vol III Pp 280 283
- 71 Pilliet Epithéliome d'ampoule de Vater malformation du rein gauche Bull de la Soc Anat de Paris LXXIVe Année 1889 6me Serie Tome III Pp 589 594
- 72 Hall Primary Carcinoma of the Ampulla of Vater Lancet London 1902 Vol I Pp 1102 1103
- 73 Huot Cancer de l'ampoule de Vater Bull et Mém de la Soc Méd des Hôpitaux de Paris 1895 lxxviii Année Tome xiii Pp 381 393
- 74 Ely Carcinoma of Duodenum Compressing Common Bile-duct Obstructive Jaundice Rupture of Dilated Gall-ducts etc Proceed of N Y Path Soc (1893) 1894 Pp 108 111
- 75 Curtis and Surmont Cancer du Pylore d'Origine Duodénale chez un Syphilitique Arch d Mal de l'App Digestif 1923 Tome xlii Pp 24 43 Also abstract. J A M A April 21 1923 Vol lxxx P 1180
- 76 Mortimer Syphilis of the Duodenum Am Jour of Syphilis 1917 Vol I Pp 473 477
- 77 Oertel Personal communication. Path Institut McGill Univ Montreal Can June 5 1927
- 78 McGuire and Corliss Carcinoma of the Duodenum Ann. of Surg 1920 Vol lxxii Pp 600 603
- 79 Nagel Unusual Conditions in the Duodenum and their Significance Arch of Surg 1926 Vol xl Pp 599 649
- 80 Vickers Cancer of the Duodenum Ann of Surg 1924 Vol lxxix Pp 239 243
- 81 Williams Case of Scirrhus in the Duodenum Jaundice Assn Med Jour London 1855 Vol III New Series P 298
- 82 Descroizilles Obstruction intestinale par suite d'un cancer du duodénum France Médicale 1876 XXXIIIe Année 19 avril 1876 No 32 Pp 45 246
- 83 Guéneau de Mussy Cancer du duodénum Quoted by Picot from Clinique Médicale tome II p 144 Revue de méd 1894 Vol xiv Pp 1093 1094
- 84 Forge et Chauvin Le Cancer primitif et intrinsèque (non vntériel) du duodénum Revue de Chir 1914 1915 XXXIVe Année. Vol I Pp 470 582
- 85 Höft Un cas de cancer gastrique avec ulcération cancéreuse du duodénum Quoted by Forge et Chauvin loco cit P 547
- 86 Peaudelen Cancer du duodénum Marseille Médical 1903 lxxvme Année Pp 505 505
- 87 Dieck Eln Fall von Ulcus carcinomatosum duodeni Archiv f Verdauungskr Berlin 1922 23 Band xxx S 306 308
- 88 Hirschel Die Resektion des Duodenums mit der Papille wegen Karzinoms Münchener Med Woch 1914 lxi Jahrgang Vol II P 1728
- 89 Lichty The Incidence of Peptic Ulcer and Carcinoma in Duodenum N Y State Jour of Med 1918 Vol xlviii Pp 433 436
- 90 Syme Carcinoma of the duodenum Resection Recovery Lancet London 1904 Vol I Pp 148 149
- 91 Pic Contribution à l'étude du cancer primitif du duodénum Révue de méd 1894 Vol xiv Pp 1081 1101 1895 Vol xv Pp 56 85
- 92 Bard Pièces histologiques du laboratoire d'anatomie pathologique Quoted by Picot loco cit P 55
- 93 Herz Quoted by Forge et Chauvin from Deuts Med Wochens Loco cit P 555
- 94 Battlet Cancer primitif du duodénum Cancer secondaire de la tête du pancréas Sténose duodénale Mort par obstruction intestinale Bull de la Soc Anat. de Paris 1896 Vme Serie Tome x. Pp 712 714
- 95 Günther Eln Fall von Carcinom des Duodenums Inaug Dissert. der Med Fac zu Jenn (aus der med Klin) 1897

- 96 Warmburg Ueber die Diagnose des carcinoma duodenal Inaug Dissert zur Erlangung des Doctorwürde in der med n chir (Friedrich Wilhelms Univ zu Berlin) 1891
- 97 Dickinson Cancer of Duodenum with Hepatic Obstruction N Y Med Jour 1879 Vol xxx Pp 148 152
- 98 Head Primary Carcinoma of the Third Portion of the Duodenum. Am. Jour of Med Sc New Series 1919 Vol civil Pp 152 159
- 99 Crane Behavior of the Stomach in Ulcer and Cancer of the Duodenum below the Bnib Am Jour of Roentg 1922 Vol ix Pp 102 111
- 100 Bloch Carcinoma of Duodenum New Orleans M. and S Jour May 19 6 Vol lxxviii No 11 Pp 42 44
- 101 Herman and von Glahn Carcinoma of Supra ampullary Portion of Duodenum Am J Med Sc 1921 Vol cxi Pp 111 119
- 102 Bibb and Stewart Primary Carcinoma of the First Part of the Duodenum with Secondary Involvement of the common Bile-duct Lancet London 1914 Vol 1 Pp 5 5 5 6
- 103 Patel et Grange (Internes) Les sténoses dnodénales Gaz des Hopitaux 1900 No 102 Pp 1135 1144
- 104 Spillmann Une observation de cancer du duodénum accompagné d'ictère Mém Soc de Méd de Nancy Année 1881-1883 22 Novembre 1883 P 3
- 105 Warm Beltrag zur Kasnistik des Carcinoma duodenal Inaug Dissert München 1900
- 106 Boyé Cancer primitif de la partie supérieure du duodénum cancer secondaire du foie et des voies biliaires Bull Soc d Anat et Phys de Bordeaux. 1884 Tome v Pp 164 168
- 107 Schrötter Carcinoma medulare ad basin et marginem ulceris rotundi duodeni subseq carcinom pleurae dext Aertzt Bericht. des k.k. Allgemeinen Krankenh zu Wien (Jahre 1 86) 1888 S 27 28

For valuable hospital data utilized in this paper we are much indebted to Doctors David A. Cheever, Henry A. Christian Harvey Cushing Reginald S. Hunt Frank B. Mallory Tracy Mallory Horst Oertel, Allan W. Rowe and Frederick W. Washburn

FRACTURE OF THE CARPAL SCAPHOID

A New Method of Treatment With a Report of One Case

BY JOHN D. ADAMS, M.D., F.A.C.S. AND RALPH D. LEONARD, M.D.*

INDUSTRY contributes many cases of fracture of the carpal scaphoid bone. Many of these cases even today, pass unrecognized until disturbance of function and persistence of symptoms force the patient to seek further advice, when usually through the agency of the X-ray a diagnosis is made.

That roentgenography, scientifically employed, has aided materially in advancing the study of this injury is an undisputed fact. The uncomplicated case presents an almost classical picture of subjective and objective symptoms and with the help of the X-ray an early diagnosis should be unailing.

It is probably true, however, that as many erroneous opinions have been given from X-ray films of the carpal scaphoid bone as any other bone in the body. Fractures are frequently diagnosed when not present and just as frequently the scaphoid is considered to be normal when later on fractures are proved to be present. This tendency to error results first, from the peculiar shape of the scaphoid with its various angles and joint surfaces, also from the fact that many scaphoids have a tendency to show a septum in the mid portion which gives a misleading appearance on the X-ray film. In the second place, the location of the scaphoid bone is such that the routine lateral view is of very little help in the detection of linear shadows on account of the other superimposed bones of the wrist. No one is justified in deciding on the absence of a fracture of any bone from a film taken only in one plane.

A thorough examination of the scaphoid requires first, examination of both scaphoids for comparison, including stereoscopic views. Second, the wrist should be in as extreme ulnar flexion as possible. Ulnar flexion brings the scaphoid into view to the best advantage. Third, films should be made of the scaphoid with the wrist in different degrees of rotation or by changing

ing the angle of the central ray of the X-ray tube. A simple linear fracture without separation of the fragments is very easily overlooked even in stereoscopic films unless the central ray of the tube passes through the scaphoid in the same angle as the plane of the fracture. Fourth, if the first radiographic examination is negative and clinical symptoms persist, a second examination should be made within a week or ten days. At this time due to the process of softening along the line of fracture incidental to healing, certain fractures will become evident on the X-ray film which were not visible shortly after the time of injury. If the above points are carefully carried out very few fractures of the scaphoid will be overlooked.

In certain positions a normal scaphoid may give the appearance of a fracture. This appearance is the result of the bone being in such a degree of rotation that the distal portion is somewhat foreshortened and appears to override the proximal portion. This produces the appearance of a notch on its inner surface.

In our opinion, a congenital bi-partite scaphoid is so rare that one does not have to consider it seriously as a practical possibility. In any event a bi-partite scaphoid occurring in one wrist should not be considered as congenital. On the other hand, one finds that subdivided scaphoids are a fairly common occurrence. Doubtless they all represent the result of some previous fracture which was undiagnosed.

Untreated fractures of the scaphoid almost always result in non-union. One must be careful, therefore in examining a wrist following a recent injury to be sure that an abnormal condition in the scaphoid is not the result of some old ununited fracture rather than the result of the recent trauma. The differential diagnosis between an old ununited fracture of the scaphoid and a recent fracture rests on a careful study of the adjacent surfaces of the fragments. The old ununited fractures invariably show induration of the bone along the line of fracture with

smooth surfaces. A recent fracture, on the other hand, shows no induration of the bone and the characteristic irregularity of a recent fracture is usually present. Furthermore, old fractures show a definite space between the fragments. Many of the recent fractures, however, are in the nature of subperiosteal fractures and show no separation. In an old condition one or both of the fragments may show some degree of osteitis, characterized in the later stages by increased bone density and a change in its internal structure. We have found one of the most reliable pathognomonic signs of an old fracture of a scaphoid to be the proliferative bone change which takes place at the tip of the styloid process of the radius. In our experience, this change about the styloid of the radius invariably accompanies, sooner or later, all incomplete or partially united fractures of the scaphoid. It is possibly Nature's attempt to strengthen the wrist joint which has been weakened by the non-union of the scaphoid bone.

The admirable paper of Allan H. Todd and the splendid monograph of Kellogg Speed cover so thoroughly the statistics, mechanics and symptomatology of this injury, that it hardly seems necessary to do more than emphasize a few of the more important points. Undeniably, this type of fracture is practically always sustained through indirect violence. The hand is dorsally flexed and in ulnar flexion, the transmitted force passes directly through the scaphoid to the radius, viz. the resistance to the force is transmitted through a flexible lever formed by the third metacarpal, os magnum, scaphoid and radius. Now did the volar-carpal ligament, which is very tough and fibrous, give way, no crushing violence would be transmitted to the scaphoid, but such is not the case, hence the scaphoid at the point of acute flexion in the lever becomes the fulcrum and gives way.

In the examination of the scaphoid bone, one is impressed with the extent to which the radial articular surface encroaches upon the dorsal aspect of the bone, hence the dorsal ligament, although longer and weaker than the volar ligament, has, by necessity, a very firm broad and extensive attachment on the dorsal surface of the bone.

The presence of the scaphoid with its long diameter intact is very necessary in the mechanics of adduction and dorsal flexion of the hand, and it is in these motions that we find our patients complaining of pain in the fractures of this bone.

Speed tells us that the scaphoid has no nutrient artery; that its blood supply comes from a branch of the radial.

Hirsh states that cavity formation exists in the center of the bone as a result of this crushing type of fracture.

In a very small percentage of cases, fractures

of the scaphoid do unite under the usual methods of treatment. It is an undisputed fact, however, that in the vast majority of cases the bone does not unite. Can it be that our method of treatment has been at fault or have we not interpreted properly the reasons for non-union? There is no doubt that in our personal experience, the routine measures of removal of a whole or a part of the bone have been unsatisfactory to the patient, as regards end-function. The symptom pain has been relieved, but a varying degree of weakness in the wrist has resulted. Perhaps the ordinary laboring man may adjust himself to this disability, but the patient who needs the full strength of the wrist in move-



PLATE NO 1

Wrist previous to operation eighteen months after injury. Note the slight proliferative bone change at the tip of the styloid process of the radius.

ments of precision is incapacitated for that type of work. Such a problem stimulated us to challenge a case of non-union of eighteen months' duration to a hitherto untried method of treatment, namely, bone graft.

The patient, a prize-fighter by profession, had satisfied himself of his inability to pursue the manly art because every time he threw his hand into abduction in the so-called hook or forced his hand into dorsal flexion the pain was so intense as to compel him to drop his arm to his side or to drop to his knees. Obviously he could not fight with the bone as it was and in all honesty, based on experience, if a whole or part of the bone was removed he was told it would weaken his wrist to a point of inefficiency as a boxer. The dangers of traumatic arthritis, sepsis and the element of non-success were fully explained and he accepted the procedure we offered.

History

Mr E E Age 21 years

The patient states that while playing football two and a half years ago, he fractured his right patella, at the same time injuring the left wrist which he did not report as he thought he had sprained it. Some months later, due to the pain on certain motions of the wrist, he sought medical advice. X ray films were taken at this time which showed a fractured scaphoid of the left wrist. The hand was put up on a cock up splint for six weeks. After removal of the splint, the pain persisted. He was advised to bake the wrist in hot sand and exercise it. This treatment was carried out faithfully without results. At present he complains of weakness in the left wrist pain on dorsi and palmar flexion and on lifting any heavy object (see Plate No 1) and excruciating pain on adduction and dorsi flexion.

Physical examination April 2, 1927

Left wrist. No deformity present. Percussion test positive. Extreme tenderness on pressure in the Tabatiere. Dorsi flexion 15°. Palmar flexion 20°. Adduction limited and painful. Abduction normal and not painful. X ray showed a transverse fracture of the scaphoid with proliferation of bone at the styloid process of the radius. There was also mobility of the fragments demonstrated by films taken in extreme adduction and abduction.

The usual approach was made through the dorsal incision. After exposure of the dorsal ligament, a careful inspection of this structure was made. It was found that this ligament had dipped down into the line of fracture and become strongly adherent to the fractured surfaces of the bone. This fact is mentioned as a possible factor in non union. The raw surfaces of bone were freed of this structure and the fracture very carefully defined. There was no cavity formation but healthy bone surface. The surfaces of this bone were very carefully curetted with a small dental curette. Great care was exercised not to traumatize especially the adjoining carpal bones. The fracture was transverse at the margin of the articular surface of the radial end. It was



PLATE NO 5

A fractured scaphoid graft in place

therefore impossible to groove the proximal fragment for a graft as it would involve the articulation with the radius. A measurement was made for the graft and a small piece removed from the tibia. A small groove was made through the cortex of the distal fragment to the length of about 1/2 inch (Plate No 5) the proximal fragment was then tipped back and a hole bored to correspond with the groove to receive the end of the graft. The graft was then cut to the proper length the end placed in the hole in the proximal fragment and brought



PLATE NO 2

Film taken immediately after the operation through the plaster cast. It also shows the radial flexion which seems to be the ideal position to hold the fragments in apposition.



PLATE NO 3

Film made three weeks after the operation with the plaster cast removed. This film shows the graft in place with the fragments in good apposition.

down into the groove. The hand was then brought into extreme adduction and flexion jamming the fragments together. This position was held firmly by an assistant. The wound was closed in layers. Skin closed with silk and plaster cast applied taking in the entire hand especially the thumb.

smooth surfaces. A recent fracture, on the other hand, shows no induration of the bone and the characteristic irregularity of a recent fracture is usually present. Furthermore, old fractures show a definite space between the fragments. Many of the recent fractures, however, are in the nature of subperiosteal fractures and show no separation. In an old condition one or both of the fragments may show some degree of osteitis, characterized in the later stages by increased bone density and a change in its internal structure. We have found one of the most reliable pathognomonic signs of an old fracture of a scaphoid to be the proliferative bone change which takes place at the tip of the styloid process of the radius. In our experience, this change about the styloid of the radius invariably accompanies, sooner or later, all incomplete or partially united fractures of the scaphoid. It is possibly Nature's attempt to strengthen the wrist joint which has been weakened by the non-union of the scaphoid bone.

The admirable paper of Allan H. Todd and the splendid monograph of Kellogg Speed cover so thoroughly the statistics, mechanics and symptomatology of this injury, that it hardly seems necessary to do more than emphasize a few of the more important points. Undeniably, this type of fracture is practically always sustained through indirect violence. The hand is dorsally flexed and in ulnar flexion, the transmitted force passes directly through the scaphoid to the radius, viz. the resistance to the force is transmitted through a flexible lever formed by the third metacarpal, os magnum, scaphoid and radius. Now did the volar-carpal ligament, which is very tough and fibrous, give way, no crushing violence would be transmitted to the scaphoid, but such is not the case, hence the scaphoid at the point of acute flexion in the lever becomes the fulcrum and gives way.

In the examination of the scaphoid bone, one is impressed with the extent to which the radial articular surface encroaches upon the dorsal aspect of the bone, hence the dorsal ligament, although longer and weaker than the volar ligament, has, by necessity, a very firm broad and extensive attachment on the dorsal surface of the bone.

The presence of the scaphoid with its long diameter intact is very necessary in the mechanics of adduction and dorsal flexion of the hand, and it is in these motions that we find our patients complaining of pain in the fractures of this bone.

Speed tells us that the scaphoid has no nutrient artery, that its blood supply comes from a branch of the radial.

Hush states that cavity formation exists in the center of the bone as a result of this crushing type of fracture.

In a very small percentage of cases, fractures

of the scaphoid do unite under the usual methods of treatment. It is an undisputed fact, however, that in the vast majority of cases the bone does not unite. Can it be that our method of treatment has been at fault or have we not interpreted properly the reasons for non-union? There is no doubt that in our personal experience, the routine measures of removal of a whole or a part of the bone have been unsatisfactory to the patient, as regards end-function. The symptom pain has been relieved, but a varying degree of weakness in the wrist has resulted. Perhaps the ordinary laboring man may adjust himself to this disability, but the patient who needs the full strength of the wrist in move-



PLATE NO 1

Wrist previous to operation eighteen months after injury. Note the slight proliferative bone change at the tip of the styloid process of the radius.

ments of precision is incapacitated for that type of work. Such a problem stimulated us to challenge a case of non-union of eighteen months' duration to a hitherto untried method of treatment, namely, bone graft.

The patient a prize-fighter by profession had satisfied himself of his inability to pursue the main part because every time he threw his hand into abduction in the so-called 'hook' or forced his hand into dorsal flexion the pain was so intense as to compel him to drop his arm to his side or to drop to his knees. Obviously he could not fight with the bone as it was and in all honesty based on experience if a whole or part of the bone was removed he was told it would weaken his wrist to a point of inefficiency as a boxer. The dangers of traumatic arthritis, sepsis and the element of non-success were fully explained and he accepted the procedure we offered.

History

Mr E E Age 21 years

The patient states that while playing football two and a half years ago he fractured his right patella at the same time injuring the left wrist which he did not report as he thought he had sprained it. Some months later due to the pain on certain motions of the wrist, he sought medical advice. X-ray films were taken at this time which showed a fractured scaphoid of the left wrist. The hand was put up on a cock up splint for six weeks. After removal of the splint, the pain persisted. He was advised to bake the wrist in hot sand and exercise it. This treatment was carried out faithfully without results. At present he complains of weakness in the left wrist pain on dorsi and palmar flexion and on lifting any heavy object (see Plate No 1) and excruciating pain on adduction and dorsi flexion.

Physical examination April 2 1927

Left wrist. No deformity present. Percussion test positive. Extreme tenderness on pressure in the Tabatiere. Dorsi flexion 15°. Palmar flexion 20°. Adduction limited and painful. Abduction normal and not painful. X-ray showed a transverse fracture of the scaphoid with proliferation of bone at the styloid process of the radius. There was also mobility of the fragments demonstrated by films taken in extreme adduction and abduction.

The usual approach was made through the dorsal incision. After exposure of the dorsal ligament a careful inspection of this structure was made. It was found that this ligament had dipped down into the line of fracture and become strongly adherent to the fractured surfaces of the bone. This fact is mentioned as a possible factor in non union. The raw surfaces of bone were freed of this structure and the fracture very carefully defined. There was no cavity formation but healthy bone surface. The surfaces of this bone were very carefully curetted with a small dental curette. Great care was exercised not to traumatize especially the adjoining carpal bones. The fracture was transverse at the margin of the articular surface of the radial end. It was



PLATE NO 5
A fractured scaphoid, graft in place

therefore impossible to groove the proximal fragment for a graft as it would involve the articulation with the radius. A measurement was made for the graft and a small piece removed from the tibia. A small groove was made through the cortex of the distal fragment to the length of about $\frac{1}{2}$ inch (Plate No 5). The proximal fragment was then tipped back and a hole bored to correspond with the groove to receive the end of the graft. The graft was then cut to the proper length, the end placed in the hole in the proximal fragment and brought

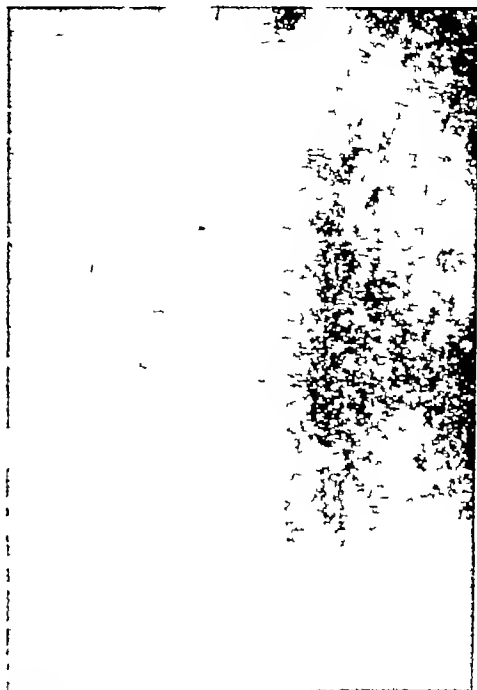


PLATE NO 2

Film taken immediately after the operation through the plaster cast. It also shows the radial flexion which seems to be the ideal position to hold the fragments in apposition.



PLATE NO 3

Film made three weeks after the operation with the plaster cast removed. This film shows the graft in place with the fragments in good apposition.

down into the groove. The hand was then brought into extreme adduction and flexion jamming the fragments together. This position was held firmly by an assistant. The wound was closed in layers. Skin closed with silk and plaster cast applied taking in the entire hand especially the thumb.

The convalescence was uneventful. The cast was split at the end of a week and the hand X-rayed (Plate No 2). The hand was left in the cast for six weeks when passive motions were begun (Plate No 3) and continued each day with a light support on the hand and wrist for three weeks. All apparatus was then removed and light exercises and massage begun. The patient was allowed to punch a light bag and use dumb bells at the end of sixteen weeks. He entered his first fight six months after the operation and won it with a knock-out



PLATE NO 4

Film made seven months after the operation shows fusion of the two fragments on the outer half of the fracture line.

with this hand. At the present writing he is free from all symptoms and considers his left hand as his most valuable asset. His only limitation of motion is dorsal flexion and that is increasing. The last X-ray (Plate No 4) shows that there is bone across about one-half the diameter of the scaphoid. The patient has recently fought three times two of which were knock-outs with the left hand and is at the present time wholly unconscious of any weakness or symptoms in the hand or wrist.

This case is offered for what it is worth in the solution of this problem. The writers have refused to operate upon one other case, as they did not feel justified in this radical procedure without at least one success. The dangers of starting up a traumatic arthritis in the preparation of the graft bed are great. The writers feel that this case demonstrates, first, the feasibility of the position of adduction and flexion in fixation, as it impacts the fragments and also puts the posterior ligament under tension, and eliminates the possibility of its interposition in the line of fracture. Second, in cases of non-union it offers a method of treatment worthy of trial, which if successful gives a wrist with better function than from our previous methods. Third, without complications no harm is done

and if symptoms persist, excision may be done at a second operation. Fourth, accurate diagnosis by a competent Roentgenologist is essential. Fifth, fresh fractures may be treated by this method. This conclusion is based upon the fact that a very large percentage of cases fail to unite under the present methods of treatment.

BIBLIOGRAPHY

- Todd, A. H. Fractures of Carpal Scaphoid. *British Journal of Surgery* 1931.
Speed, Kellogg. *Traumatic Injuries of the Carpus*. D. Appleton & Co.

PLANS FOR A NEW BUILDING FOR TEMPLE UNIVERSITY SCHOOL OF MEDICINE

Announcement of a campaign to raise money to provide for a new building for the Medical School of Temple University has been made by President Beury. It is hoped that one million dollars will be contributed. The site for the building has been selected close to the Samaritan Hospital.

Applications for admission to the School have been far in excess of present accommodations.

If the ambitions of the friends of this School can be met the hope has been expressed that larger buildings with better equipment will warrant raising the present classifications of this School by the Council on Medical Education.

THE WATER TREATMENT OF INFANTILE PARALYSIS

The Medical Staff of the New York Hospital for the Ruptured and Crippled is planning for the installation of a swimming pool in which treatment of cases of infantile paralysis may be carried on. Pools have been in other places in operation in this treatment. The exercise of the affected limbs under water is made easier because of the relative specific gravity of water and the human structures which eliminates to some extent the antagonism of weight.

This treatment has been used in a limited way at the Boston Children's Hospital.

The cost of the swimming pool under plans by the Hospital For Ruptured and Crippled will be about seven thousand dollars.

VETERANS OF THE WORLD WAR SUFFERING WITH MENTAL DISABILITIES

The American Legion has made surveys of World War veterans during the past eighteen months and has found that mental cases are increasing rapidly.

The report carries the information that present hospital accommodations are quite inadequate to meet existing needs.

The Chairman of the Legion's Rehabilitation Committee reports that many sufferers with mental disturbances have been confined in city and county jails because of lack of facilities for treatment in well equipped hospitals. This is a reflection on this nation and the suggestion of the Legion should lead to prompt action for the proper care of these unfortunate veterans.

Case Records of the Massachusetts General Hospital

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R C CABOT, M.D.
F M PAINTER, A.B., ASSISTANT EDITOR

CASE 14081

TWO WEEKS' FEVER AND WEAKNESS

MEDICAL DEPARTMENT

An Italian-American schoolboy of nineteen entered the hospital August 13 complaining of weakness, fever and sweating of two weeks' duration

The illness began August 1 with pains in his back and in his muscles on motion, general stiffness and excessive sweating following six hours' hard work in the hold of a banana ship from Cuba. These symptoms lasted only a few days. The morning after their onset he developed intermittent frontal or occipital headache and stiff neck, which became worse for the next four days. He felt shaky, tired easily, sweat profusely and was weak. August 5 he went to bed because of weakness. Twice August 11 he had shaking chills. He had periods of feeling feverish at irregular intervals. He had a bad taste in his mouth, and marked thirst. His weight fell from 152 pounds to 147 in two weeks. On the day of admission a physician found his temperature 105°

His mother and a grandfather died of heart disease

He had always been well and strong. He had urinated once or twice at night for years. At sixteen, after having had cough with much greenish foul sputum for two weeks, he had a few ounces of "water" removed from his left chest, and was laid up for another week. A year before admission he had tonsillectomy and adenoidectomy. For the past two months he had had questionable blurring of vision. He denied venereal disease by name and symptoms. His habits and general hygiene were good except that a month before admission he drank from a well while blueberrying.

Clinical examination at entrance showed a fairly well nourished, pale boy lying comfortably. Skin dry, hot, subicteric. Sclerae subicteric. Deviated nasal septum, with a mass of soft tissue obstructing the right naris. Slight pyorrhea. Throat dry, congested, with a small amount of purulent material over the posterior pharyngeal wall. Tonsillar fossae inflamed. Tonsils small, buried. Lungs normal. Apex impulse of the heart visible and palpable 8½ centimeters from midsternum in the 4th left inter-

space. Midclavicular line 7 centimeters, left border of dullness 11 cm. in the 5th space, right border 3 in the 4th space, supracardiac dullness 7. Sounds and action normal. A soft systolic murmur over the pulmonic area. Pulses and uterine walls normal. Blood pressure 90/30. Abdomen normal except for enlargement of spleen and barely palpable liver edge. Rectal examination, genitals, extremities, pupils and reflexes negative.

The day after admission another examiner found the patient very sick looking, sallow rather than subicteric and "dopey." No headache or stiff neck. Mouth and tongue very parched. White exudate in right tonsillar fossa—food? Throat and nose otherwise negative. Neck vessels pulsating violently. Visible forceful pulsation of heart in 4th space just inside the nipple line. At apex and up left border of sternum a fairly loud blowing systolic murmur. Second sound doubled (protodiastolic rhythm). Sounds of only fair quality. Pulmonic second sound accentuated. Lungs negative to percussion with the patient on his side. Inconstant coarse moist expiratory râles at both bases posteriorly. Abdomen moderately distended, making palpation difficult, tympanic, not tender. Spleen felt, liver not felt.

Urine normal in amount (patient incontinent), specific gravity 1.014—1.016, cloudy at 3 of 4 examinations, a very slight trace of albumin at all. A urine culture August 14 showed colon bacillus. Blood 7,100 to 3,700 leucocytes, 90 per cent polymorphonuclears, many showing poor nuclear differentiation. Hemoglobin 55 to 40 per cent. Reds 4,500,000 to 3,000,000, with achromia, marked anisocytosis and poikilocytosis (checked up by vital stain), many large cells, one stippled cell seen. Platelets large, somewhat reduced in numbers, some groups. Wassermann negative. Icteric index August 13 about 100, August 15 on serum after protein had been precipitated by alcohol less than ten. Stools watery or soft. Guaiac slightly positive at one of four examinations. No macroscopic blood. No bile. Two stool cultures showed colon bacillus.

Temperature 103° to 106.4°, rectal. Pulse 100 to 140. Respirations 20 to 43.

The night of August 14 the patient was irrational and got out of bed. The next day he had two nosebleeds, the second quite profuse. There was some bleeding from beneath the gums. The red cells showed increased fragility. August 15 the visiting physician found no explanation for the jaundice, anemia or high polymorphonuclear count by the diagnosis he considered most logical, and was inclined to disregard the anemia. Repeated blood counts continued to show it.

August 17 600 cubic centimeters of blood was transfused. That night the patient was delirious, requiring morphia. He did not take his feedings well, and showed slightly more distention. The morning of August 18 he appeared to

be nearly moribund, with slow and irregular respiration and tracheal râles. The abdomen was soft and not distended. The blood pressure was 122/50. The neck was very stiff. The knee-jerks were not obtained. There was no Babinski or Kernig. There was slight dullness over the left chest posteriorly and over the left upper chest anteriorly. In the latter region the sounds were very near the ear. Both lungs posteriorly were filled with coarse crepitant râles. Just outside the left nipple there was a palpable râle or rub. On auscultation this was found to be a very loud high-pitched musical sound filling all of inspiration. Expiration everywhere was prolonged.

The patient grew steadily worse. Fluids and feedings were given by nasal tube. Just after midnight August 18 he died.

DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

When you hear that a person has had weakness, fever, sweating, and nothing else, what guess do you make as to the nature of the trouble?

STUDENTS: Tuberculosis. Acute infection.

DR. CABOT: It sounds like infection. It is not acute. It may have been going on for more than two weeks. Then we ask what class it belongs to. Does it belong to the neoplastic, the infectious, the anaphylactic group, to the deficiency diseases, to the physicochemical or the surgical group? That is the most general classification one makes. The fact that this man came for these symptoms strongly suggests that he came for infectious disease. Of course it does not prove it. He could have had Hodgkin's disease, which is a neoplasm which gives you fever, sweating and weakness. But still, taking a hundred cases that begin that way perhaps ninety would turn out to be infection.

Cuba is the essential word in the opening sentence of the present illness. Up to that point we have nothing more than the evidence of infection. But we hear he comes from Cuba and we begin to think of certain common tropical diseases that we should not think of if he had been living here.

Going over the present illness—I still have no idea what is coming—I should still say we have evidence only of some general infection. I do not think we can say what infection until we get nearer to the end of the case.

A STUDENT: It is not common to have chills with any infection?

DR. CABOT: Not with any, but with many. Many people have a true shaking chill with nothing but a sore throat. Of course in pneumonia that is the custom, but not often in meningitis, although you often do get chilliness

With septicemia of the streptococcus group you very often get chills. With cardiac sepsis and with internal abscess, whatever its type, you get chills. So I should say a great many general infections begin with chills. I have not mentioned malaria, but of course we must think of that since he came from Cuba.

Now we must speculate as to what that illness was. If his sputum was really foul that is almost certainly evidence of lung abscess, either single or multiple or in the form we call bronchiectasis. If we were sure it was foul and had smelled it ourselves it would narrow down the evidence a good deal. We never see that sputum in tuberculosis or most of the other forms of cough with sputum. But he is only nineteen and that record is three years back.

That "water" removed from his left chest sounds like serious pleurisy, and serious pleurisy usually means what disease?

A STUDENT: Tuberculosis.

DR. CABOT: Yes, in the majority of cases. So we begin to wonder about that.

If that tonsillectomy and adenoidectomy had dated three years back we should think it was connected with the foul sputum. It is only a year back.

On the basis of the past history it is an infection, and unclassified, except that it rather suggests the lungs.

NOTES ON THE PHYSICAL EXAMINATION

The heart is a little higher up than we expect. We wonder if there is something below the diaphragm pushing it up. It is a centimeter outside the midclavicular line, which suggests some enlargement.

To sum up what we have so far, he had evidence of infection, a little bit of jaundice, a palpable spleen and liver, and it seems as if he had some enlargement of the heart. He has, if the record is correct, an extraordinarily low diastolic blood pressure.

"No headache or stiff neck." What does that tend to rule out?

A STUDENT: Meningitis.

DR. CABOT: Yes. There is evidence of sallowness of the skin, but not of the conjunctiva. Apparently the examiner did not think it any yellower than ordinary citizens have a right to have. Probably the yellow color did not come right up to the nose.

He has no headache and no stiff neck, so that our suspicions of meningitis begin to get less.

There are no heart murmurs, therefore no aortic regurgitation. What are the other causes of violently pulsating vessels aside from aortic regurgitation?

A STUDENT: Anything that will cause the heart to beat very hard.

DR. CABOT: Yes, but I mean a person in bed.

A STUDENT: Anemia.

DR. CABOT: Possibly.

A STUDENT Exophthalmic goiter

DR CABOT He has not got that

A STUDENT Arteriosclerosis

DR CABOT Arteriosclerosis will do it sometimes but anemia is the thing that seems to be the most probable of those that you have mentioned

It is very hard to tell about accentuation of the pulmonic second sound because people of nineteen have pretty loud pulmonic second sounds anyway

"Inconstant coarse moist expiratory râles at both bases posteriorly" That is the sort of thing you would hear in any fever. I think they paid no attention to those râles. I do not see how we can either

He was in the hospital only two weeks so you see in the red cells a very rapid drop. Something was destroying his red cells with extraordinary speed. It is secondary anemia, not primary, if the blood is correctly reported

"Icteric index August 13 about 100" That is nearly two weeks after the first observation. He certainly is jaundiced now

They are thinking of typhoid you see. That pulse rate is relatively high for typhoid. The respiration does not help us at all. You often have a high respiration in infections that are not pulmonary for instance in meningitis, typhoid septicemia. It is probably not typhoid with that chart

The blood pressure is still high. There is more pulse pressure more difference between systolic and diastolic than there was before

The lung signs would be very much more significant if it were not on the very day he died. It is not wise to put much emphasis on them. I suppose that high pitched musical sound was a rale

Unless the visiting physician knew more about the case than I do he did not know what the diagnosis was up to this time

DIFFERENTIAL DIAGNOSIS

I do not know what the diagnosis is. But let us make some speculations. In the first place he is a young boy and we must think of the infections commonest at that age. Second, his illness ran its full course in about eighteen days and shows every evidence of being an infection and no good evidence of being anything else. There is no evidence of neoplasm or of a physicochemical injury or of any other group of diseases. So I think our task is to say what the commonest infections are that run a course of eighteen days with continuous fever in a boy of nineteen and without obvious physical signs other than enlarged spleen, jaundice and anemia

I looked up a thousand cases of continued fever in this hospital and found in a large proportion of these that when there was no particularly obvious physical sign it usually came out

one of three diseases, typhoid tuberculosis and sepsis, using the latter in a wide sense—streptococcus and staphylococcus infection either localized in the heart valves or associated with an obscure internal abscess or merely general. So on the basis of pure statistics this should be one of those three things. What else should we consider?

A STUDENT Malaria?

DR CABOT I should say not unless they have held back from us very obvious data. I think it would hardly be in the rules of the game to hold back the finding of parasites. And they would not have given us the case if they had found parasites. I think we can say it was not malaria because of the data given to us. It could be estivo-autumnal malaria on the facts here if you add that they found a nest of parasites because you do not have to have chills at all in that type of malaria. The queer thing would be that he was not comatose. I think we can rule out malaria

A STUDENT Benzol poisoning?

DR CABOT We have heard a lot about that recently. I do not know much about it but I have never heard of a case with continued fever as high as this

DR TRACY B MALLORY Certainly none of the cases we have had here have had fever

DR CABOT I do not think fever is a sign of benzol poisoning. Also we ought to have more leukopenia. I think we can rule it out

A STUDENT Yellow fever?

DR CABOT I have never seen a case so far as I know. We have had only one case in this hospital and therefore I do not know much about it. I think it ought to be considered. Here is a man who is yellow and has a fever. As far as I know he might have yellow fever

A STUDENT Banti's disease?

DR CABOT No because it is never fatal in eighteen days. It is a chronic disease. We have no such enlargement of the spleen. I should not consider it

A STUDENT How about trichiniasis?

DR CABOT That is a disease so far as I know always showing a characteristic blood except in chronic cases. This would be a very acute case certainly and the blood is not characteristic. The eosinophiles are not increased. He ought to have a great deal more muscular tenderness than is spoken of here. Fatal cases are rare. We have no history of his having eaten uncooked meat but he might have done that without our knowing it

A STUDENT How about influenza?

DR CABOT I do not see how it can be positively ruled out. One does not expect jaundice in influenza but I am sure that there are cases showing jaundice

A STUDENT Are there fatal cases of influenza without signs of pneumonia developing earlier than this?

DR CABOT I do not remember one without obvious signs of pneumonia occurring earlier. Then the color of the face is against it. All the fatal cases I have seen have had a dusky gray color. Nothing of that kind is spoken of here. Usually there are much more definite upper respiratory symptoms in influenza. I cannot rule it out, but I think it is improbable.

I am coming back to my old trio—typhoid, tuberculosis, sepsis.

Typhoid I do not know how to rule out. We are not told anything about the Widal reactions. It may be they were positive. It may be there was a positive blood culture. We have to bear in mind the possibility that these data are withheld so as to give us more of a run for our money. The relatively high pulse which I spoke of is not enough to rule out typhoid.

A STUDENT Would not that point to malaria?

DR CABOT I do not think it is malaria for reasons given.

A STUDENT Do you get leukopenia in typhoid?

DR CABOT Yes, and he did have a leukopenia. But we have no right to have 90 per cent polynuclears in typhoid. I do not know how it can be accounted for under that diagnosis.

A STUDENT Would not the jaundice also be against typhoid?

DR CABOT One usually does not find so much jaundice. Yes, that is against it. So that there are three things against typhoid, the relatively high pulse, the high polynuclear count and the jaundice.

DR MALLORY I have here the results of the Widal reactions, Dr Cabot. With the typhoid bacillus it was negative, with paratyphoid A it was strongly positive, and with paratyphoid B it was positive.

DR CABOT Anyone who believes this is paratyphoid can do so. I never heard of anyone's dying with paratyphoid. Therefore, those positive reactions to paratyphoid A and B do not sway me a great deal.

A STUDENT Would not the heart rule out typhoid? He apparently had enlargement of the heart.

DR CABOT A big heart is against all the things we are talking about except malignant endocarditis. I do not think our evidence of big heart is first rate. I do not think it ever is good unless we feel the impulse is obviously displaced or unless we see it by X-ray. You never can be sure of it by percussion.

In favor of typhoid we have the kind of fever and the duration of fever, the general infectious symptoms, the abdominal distention, the enlarged spleen. Nothing is said about rose spots. In most cases of typhoid when you keep looking you find rose spots. They are really a valuable diagnostic point. Nothing is said about them here.

A STUDENT Do most people with typhoid fever without perforation have tenderness in the abdomen?

DR CABOT Yes.

A STUDENT But they speak of absence of tenderness there.

DR CABOT In most cases of typhoid there is only such tenderness as goes with distention. Anyone with distention tends to have tenderness, and in typhoid you do not have any more than is accounted for by distention.

A STUDENT What caused the stiff neck?

DR CABOT I do not know. I do not believe he had meningitis, and he had stiff neck only at the very end. I am throwing it out, although it worries me a little.

A STUDENT In how large a proportion of meningitis cases do you get a positive Kernig sign?

DR CABOT Very large. I should say certainly over ninety per cent.

A STUDENT Does the loss of weight suggest anything?

DR CABOT No.

A STUDENT Would not the typhoid bacillus occur in his urine in two weeks?

DR MALLORY It is apt to be positive at certain stages, usually after about the third week, and may be positive for several weeks afterwards, but in probably not more than twenty five or thirty per cent of the cases, I should say.

DR CABOT I cannot go any farther on typhoid. I cannot rule it out, but I do not think that is the diagnosis. It might be. I should not be surprised.

Let us take tuberculosis. It cannot be any obvious form of pulmonary or glandular tuberculosis. We should get the evidence on physical examination. There is only one form it could be, that is miliary. As you know, that is one of the things on which we go wrong most frequently. We are always missing it. Let us line up the evidence for and against miliary tuberculosis. For it is the fact that he has a fever. At one time he had rales in his lung, which we often find in miliary tuberculosis, but that is not much. The blood is compatible, more compatible than it is with typhoid. The spleen is perfectly compatible. The age is as common as any age I know of for miliary tuberculosis. I cannot rule it out. What are the points against it? In the first place in most cases, not all by any means, there is an old focus in the lung, gland, bone, kidney, from which the trouble starts. He may have a focus without our ever knowing it.

A STUDENT He may have it from his possible pleurisy.

DR CABOT He might have had a focus in his lung that was not discovered. They had no X-ray, no tuberculin test. The second point is they were looking as hard as they could for everything and they ought to have noticed a certain degree of cyanosis. Miliary tubercles do

not give physical signs but they often do produce cyanosis. The third point most cases of military tuberculosis include the brain with other organs, and when they include the brain there are generally more brain symptoms than this man had. He had some brain symptoms, stiff-neck and headache at the end but most cases have more distinct clouding of consciousness, delirium, or cranial nerve symptoms than he had. But all that I have just been saying is not enough to rule out military tuberculosis, and I am not ruling it out.

A STUDENT: What effect would jaundice have on cyanosis?

DR CABOT: You can have the two at one time and recognize them. It is a queer color but it is there. The presence of jaundice is a little against military tuberculosis. Few cases have it. That is all I can say about military tuberculosis. You know all the textbooks speak about tubercles seen in the choroid. We know that they are usually not found in cases proved to be tuberculosis. Of course if they had had any idea that he had this infection they would have tapped his spinal cord. The fact that they did not leads me to believe that they did not think he had it.

On the whole I think it is the third of the things that I have considered, although I am not in the least sure of any one. I cannot rule out typhoid or military tuberculosis. But it seems to be more like a general septicemia.

A STUDENT: Why did we not get it on blood culture?

DR CABOT: Even if it had been done and had been negative it is not important at all as negative evidence, especially if it was not taken during a chill. It has more chance of being positive then than at any other time. The white blood count is low for septicemia, but a considerable minority, I should say ten or fifteen per cent., have these low counts, and we account for them by saying that the organism is overwhelmed by the virulence of the infection, as in peritonitis, in diphtheria, and in pneumonia. I have to say this is one of the cases that has an overwhelming infection and drives down the white count, usually leaving the polynuclears increased.

In favor of sepsis is jaundice, hemolytic anemia, high polynuclear count and that is all, as far as I know. There are fewer negative points against sepsis than there are against the other two, but it is not a clear case at all.

A STUDENT: How about the spleen?

DR CABOT: It goes perfectly well with any one of the three I am considering.

A STUDENT: Do you suppose this could be a septicemia endocarditis?

DR CABOT: Yes, that is a good point. If we regard this as the form of septicemia which is associated with vegetations in the heart valves we can easily understand the heart's being en-

larged. The queer thing about that, though, is that it ought not to enlarge within eighteen days. I do not think a heart ever does.

A STUDENT: Could this be a malignant pericarditis or adhesive pericarditis?

DR CABOT: Yes.

A STUDENT: How about the blurring of vision that he had had for two months?

DR CABOT: I do not know what to say about that.

A STUDENT: It might be consistent with military tuberculosis.

DR CABOT: I think it is consistent with any of the three. I am looking for differentiating symptoms.

A STUDENT: Does the term acute endocarditis imply septicemia or not?

DR CABOT: Yes, I think so. I believe there are always organisms in the blood. We might get nothing more than a systolic murmur and a slightly enlarged heart. It is perfectly possible that this is acute endocarditis. I have not said that it was because we have no evidence of embolism and no blood culture. It might perfectly well exist without embolism, and one can miss the blood culture.

A STUDENT: Why could you not include typhoid septicemia?

DR CABOT: I wanted not to consider things that happen once in a blue moon.

A STUDENT: I mean septicemia caused by typhoid.

DR CABOT: That is just typhoid. By septicemia I mean infection due to one of the organisms of the streptococcus or staphylococcus group. I think it is streptococcus of some type. That is my best guess.

DR MALLORY: The blood culture showed bacillus typhosus.

I ought to apologize for that, but it would not have been a discussable case with that information, of course.

BACTERIOLOGICAL REPORTS

BLOOD CULTURES

August 13 Bacillus typhosus in two flasks
August 15 Bacillus typhosus in two flasks

URINE CULTURE

August 16 Bacillus typhosus

WIDAL TESTS

August 15 Typhoid showed clumping but no motility. Paratyphoid A negative. Paratyphoid B positive.

August 18 Typhoid negative. Paratyphoid A strongly positive. Paratyphoid B positive in two flasks.

STOOL CULTURES

August 14 and 16 Bacillus typhosus negative. Colon bacillus positive.

CLINICAL DIAGNOSIS

Typhoid fever
Secondary anemia
Bronchopneumonia

DR RICHARD C CABOT'S DIAGNOSIS

Septicemia, streptococcus, or
Typhoid fever, or
Miliary tuberculosis

ANATOMIC DIAGNOSIS

Typhoid fever

DR MALLORY It was a perfectly straight case of very acute typhoid infection from the pathological point of view, with most of the typical findings

The spleen was an enormous one for typhoid, weighing over 800 grams. The intestines showed marked enlargement of the solitary follicles, and Peyer's patches beginning about in the mid-jejunum and running down to the ileocecal valve. I have here a specimen of the intestine. The swelling is not so marked now as it was when the specimen was fresh. In putting it into formalin one inevitably gets considerable shrinkage. But you can see a Peyer's patch here that is nearly three inches long and an inch and a half wide, with slight shallow ulceration in the center.

There was nothing in the heart. It was not enlarged.

There was bronchopneumonia, which showed both typhoid bacilli and various cocci in the microscopic sections. One occasionally gets bronchopneumonia in typhoid cases showing purely typhoid organisms, but very frequently one also gets a secondary terminal bronchopneumonia due to pneumococci or streptococci.

His very markedly increasing anemia and the peculiar morphology of the red cells led to considerable interest as to what his bone marrow would show. It was a very bright red, extremely hyperplastic marrow that microscopically showed marked hyperplasia of both the red cells and the white cell forming elements, with a few megaloblasts and very numerous myelocytes. There is very little literature on the bone marrow in typhoid. I do not know how this checks up with the usual findings. In general I think one expects hypoplasia rather than hyperplasia.

DR CABOT What was the diagnosis of the visiting physician?

DR MALLORY Typhoid fever

A STUDENT Would this be compatible with paratyphoid?

DR MALLORY It is much too severe for an ordinary paratyphoid. I believe there have been cases as severe as this, particularly during the war in France, but they are most unusual.

I think almost certainly there must have been a mistake in that Widal reaction. After eighteen

days the Widal should have been positive. The stool cultures were done repeatedly and were always negative.

DR CABOT I think that is a matter of real importance, because here is an extraordinarily acute case of typhoid with very marked intestinal lesions. One occasionally gets it without any intestinal lesions. Naturally then one ought not to be surprised to find negative stools. But here in spite of massive lesions in the intestine we were unable to pick up a single organism in the stool cultures.

A STUDENT How about the heart?

DR MALLORY The heart was negative, not enlarged. It was simply pushed upward by the abdominal distention. Possibly the big spleen had a little effect.

DR CABOT You see in this case the sort of evidence on which I get skeptical on cardiac percussion.

A STUDENT How about the blood pressure?

DR CABOT I have nothing to say.

A STUDENT Did you ever see a case of typhoid like this before?

DR CABOT I do not remember. If I ever did see one I have forgotten it.

CASE 14082

THE OBVIOUS DIAGNOSIS MAY NOT BE
THE WHOLE STORY

SURGICAL DEPARTMENT

First admission. A German of fifty-two entered the hospital March 16.

Five months before admission he had an attack of intense knife-like pain in the right upper quadrant radiating to the shoulders, requiring opium. Following it he was in a hospital for seven weeks and in bed for three weeks more, with distention, belching of gas and a feeling of uneasiness in the epigastrium at intervals. Two months later he had a second attack similar to the first but less severe, with jaundice, clay-colored stools and dark urine. March 13 he had a third attack. Pain, distress and jaundice had persisted. Since the onset of the illness he had lost much weight.

His family history is good.

He had measles, scarlet fever and diphtheria in infancy and running ears for seven years. The hearing in his right ear was poor. His general health had always been very good except for an occasional "bilious attack" when he was constipated. Twelve years before admission he weighed 186 pounds, his usual weight was 174 and his present weight 159.

On clinical examination the skin and sclerae were icteric. The heart showed extrasystoles, no other abnormalities. There was marked tenderness in the upper quadrants, particularly to the right of the midline, with slight resistance. Urine and stool examinations showed bile

Icteric index 20 Coagulation time 20 minutes Leukocyte count 13,000

March 17 operation was done He improved slowly April 5 he was discharged

History of interval At his second admission he gave no account of his condition until the middle of November Then he had pain in his side similar to the pain before the operation but less severe This gradually increased Three days before his readmission he had very intense headache starting in the occipital region and settling in the forehead constant though varying somewhat in intensity and making him a little dizzy Accompanying or immediately following the onset of this there was onset of aphasia, numbness of the right hand, and rapidly increasing blurring of vision On the day of admission he found he could not move this hand In giving the history he wandered a little and repeated himself Although there were some minor inconsistencies in his story it was thought probably to be in general reliable

Second admission November 21, six months and a half after his previous discharge

On clinical examination he was still well nourished, lying on his right side with his knees drawn well up, occasionally groaning in pain The skin was subicteric The sclerae were normal The left ear drum showed a white deposit on the anterior half, light reflex somewhat dulled, vessels over malleus engorged The patient complained of tenderness on examination The throat was somewhat red, with some patches of lymphoid tissue The tongue showed a dirty black coating about its middle There were a few pea-sized anterior cervical glands The heart was not remarkable The radial arteries were barely palpable Blood pressure 150/95 Both sides of the abdomen showed rigidity, most marked in the epigastrium, which was tender throughout, most markedly just to right and left of the midline Palpation of the viscera was impossible because of rigidity and muscle spasm

Neurological examination showed the following positive findings Vision of both eyes blurred Fingers counted at three feet Visual fields done roughly with light and fingers suggested a right homonymous hemianopsia The patient was not entirely reliable however Right ear, watch not heard even when touching ear Left ear, watch heard at one inch Air conduction less than bone in both ears Weber's test* referred to the right ear Memory for both past and recent events clouded. This fact he himself realized He was slow to react and respond, but when he concentrated he could do so very well He had partial aphasia which cleared up somewhat in the hospital No hemianopsia of half an object satisfactorily made out, on one occa-

Weber's test. A tuning fork held against the vertex is heard best by the sound ear if deafness is due to disease of the auditory apparatus by the affected ear if deafness is due to obstruction of the air passages

sion when shown a pitcher he said he saw only half of it, but more detailed questioning brought out the fact that he saw the other half also but saw it blurred He felt a sense of numbness in his right arm but nowhere else Grips about equal, possibly slightly weaker on the right Epigastric and abdominal reflexes absent on the right, sluggish on the left Cremasterics normal Biceps, triceps and pronators active in the arms possibly slightly greater on the right Questionable Babinski on the left No Gordon Oppenheim, Kernig or clonus No sphincter disturbances on admission November 22 he developed urinary incontinence

Before operation amount of urine not recorded, urine dark, cloudy, specific gravity 1.030, occasional red and white blood cells in the sediment, no bile Blood 19,900 to 15,600 leukocytes, 85 per cent polymorphonuclears, hemoglobin 55 per cent reds 3,880,000 smear normal Wassermann negative

Before operation temperature 98.4° to 101.3°, pulse 80 to 105, respirations normal

A lumbar puncture was done by a student November 21 in the fourth to fifth lumbar space and 15 cubic centimeters of clear colorless fluid removed initial pressure 250 pulse and respiratory oscillations and rise on cough prompt and adequate combined jugular pressure 390 to 295, left 300 to 260 right not obtained, 2 cells, alcohol and ammonium sulphate negative

The patient was seen in consultation by a surgeon who thought that an abdominal operation would be necessary The tenderness in the liver region increased Fluoroscopic examination November 22 showed the chest clear The diaphragm moved evenly on both sides, but the excursion was small The abdomen was filled with gas The patient was too ill to be placed in the proper position for skull plates The examination was very unsatisfactory Another examination November 25 showed the diaphragm high on both sides and its respiratory motion limited It was not fixed on either side Its outline was somewhat irregular The costophrenic sinus on the right was hazy Just above the diaphragm on the left there was a wide irregular line of increased density, perhaps representing consolidation The heart shadow was obscured by the high position of the diaphragm There were a few calcified glands at both roots The outline of the liver was not visible

The patient grew more sluggish and continued to have much pain and great tenderness The scar became dusky red and there was an area of redness the size of a hand extending two inches above to two inches below the umbilicus over the old scar region on the right side

November 23 operation was done November 26 the patient was in coma and had right facial paralysis The right arm reflexes were greater than the left The next day there was little response to pin-prick Babinski was present on

both sides The left arm and leg showed thrashing movements The right arm and leg moved on pin-prick but showed little spontaneous activity The reflexes on the right side were brisker than those on the left The left fundus showed no choking It was impossible to see the right (media dull)

A lumbar puncture done November 26 gave 15 cubic centimeters of pinkish fluid of exactly the same color in both tubes, initial pressure 140, combined jugular compression 350/120, right jugular 140/140, left jugular 250/140, after the withdrawal of 5 cubic centimeters 80 There was no rise after right jugular compression although it was tried five times Left jugular compression was satisfactory twice The fluid showed 278 lymphocytes, 3 polymorphonuclears, 1,280 red cells

November 28 a second operation was done The following night the patient had Cheyne-Stokes respiration and the temperature reached 105.2° A blood culture showed staphylococcus aureus November 30 he died

DISCUSSION

BY EDWARD L. YOUNG, JR., M.D.

This is as clear a picture as one could ask of trouble in the biliary tract But that tells us only a small part of the story, because trouble here can be due to various causes The commonest cause of trouble in the biliary tract that is characterized by severe pain, by obstruction to the flow of bile into the intestine, as evidenced by clay-colored stools and bile in the urine, is stone But we must remember that the type of obstruction which generally is painless, namely carcinoma, can occasionally cause attacks with pain and evidence of biliary obstruction which was not there before That is unusual, but it can be present

The only thing to do in the face of a situation like this is to assume the common cause for trouble and to treat it in the only way we know, and that is operation, to find the cause of obstruction and when possible remove it

His coagulation time of twenty minutes should mean that he had three days' treatment by intravenous injection of calcium chloride to try to lessen the risk of hemorrhage In spite of the fact of the delay of coagulation time, the blood change as shown by laboratory test does not necessarily spell hemorrhage after operation, any more than a normal coagulation time and blood study give us freedom from hemorrhage after operation

Bearing in mind the possibility of some of the abnormal causes, I see no other diagnosis to put first except cholelithiasis, and the treatment, operation The fact that he has lost weight does not necessarily spell anything more than upset digestion because of biliary tract disease and poor absorption of food

DR. YOUNG'S PRE OPERATIVE DIAGNOSIS

Cholelithiasis

PRE OPERATIVE DIAGNOSIS

Acute cholecystitis

OPERATION, FIRST ADMISSION

Ether The usual right rectus incision The pyloric end of the stomach, the duodenum and the omentum were adherent to the gall-bladder with pork-like adhesions It was impossible to separate any adhesions except the omental The gall-bladder was found to be deeply imbedded in the liver There was no attempt at its removal An incision was made in the under surface of the gall bladder and a large number of stones were removed The gall-bladder was full of pus and its walls were thickened It was impossible to feel either the cystic or the common ducts on account of adhesions A rubber dam was sutured in the gall-bladder and a cigarette wick was inserted

FURTHER DISCUSSION

Of course there is adequate cause here for the trouble that we have read about, and there is adequate cause for jaundice in the obstruction to the common duct from adhesions But of course, leaving the story as they did, without investigating the common duct, still leaves the possibility of stone present

DR. CABOT Didn't the state of things found at operation present a very disagreeable situation for a surgeon?

DR. YOUNG It is an extremely difficult problem, because the attempt to go to the point of finding out what is the situation in the common duct may kill the patient or may cause a permanent obstruction to the duct from the damage done

There are two separate situations Whether or not they can be united under the same cause is a question He did not have a removal of the gall-bladder, so that further stone formation can take place Of course this gall-bladder was badly damaged, and consequently stone formation is more likely than it would be if the walls had been comparatively normal and had been left behind Moreover there was a possible error in the leaving behind of something in the biliary ducts So that the reappearance of his pain strongly suggests the recurrence of at least inflammation, and with the amount of inflammation that was there a recurrence of inflammatory edema and swelling would mean obstruction and more pain, so that we are not obliged to assume stone

Just on the story alone I do not see how we can connect the other damage, to the central nervous system

The blood pressure was perfectly normal for him

I am entirely incompetent to say what these various neurological findings mean

To me this spells two things,—central nervous system damage and a recurrence of trouble in the biliary tract, an acute inflammatory upset with possibly a spreading to the pancreas, because it mentions specifically here that tenderness extends to the left and that is always suspicious of the spread of trouble into the pancreas with a known infection in the biliary tract. Inasmuch as I believe this is an infectious process from what we know at previous operation, and not a malignancy the only way in which central nervous system disease has localized would be a spread of the infection with brain abscess. That seems to me a long shot, as we see such cases.

The white count and the temperature back us up in the belief that there is an acute infection starting in the biliary tract.

The fluoroscopic examination would tend to rule out subdiaphragmatic abscess as a localization of the infection.

It seems to me that the only thing to do is to give relief to this infection which seems inevitable.

I do not see that we have any direct evidence of infection except in the region of the old operation, and suggested by the X-ray beginning in the base of the left lung. I should assume that the thing to do was to make an incision through the old scar and from the last note here, of redness in the scar, I should doubt that it would be necessary to go into the gall-bladder again in order to find pus. I shall not be at all surprised if there is evidence of pancreatitis also.

DR YOUNG'S PRE-OPERATIVE DIAGNOSIS

Acute infection of the biliary tract
Brain abscess?
Acute pancreatitis?

X-RAY INTERPRETATION NOVEMBER 11

The examination suggests a pathological process below the diaphragm.

PRE-OPERATIVE DIAGNOSIS NOVEMBER 23

Empyema of the gall-bladder

FIRST OPERATION, SECOND ADMISSION

Local novocain. The upper portion of the previous right rectus incision explored. Pus was found before the fascia was divided, as it had already dissected out underneath the skin. The layers of the abdominal wall were incised and a cavity about three inches deep with a smooth wall which felt like a gall-bladder was entered. A rubber tube about the size of a forefinger was inserted into the abscess cavity for drainage. The wound was left open.

FURTHER DISCUSSION

In other words, there was spreading of the infection through the tissues along the line of least resistance, because a scar is always the line of least resistance. Practically always pus will burrow out through that rather than go through normal tissue.

DR CABOT. My guess is that there ought to be a sinus thrombosis.

DR YOUNG. I assume that they went after infection in the skull.

DR YOUNG'S PRE-OPERATIVE DIAGNOSIS

Brain abscess

PRE-OPERATIVE DIAGNOSIS NOVEMBER 28

Left parietal lobe abscess?

SECOND OPERATION, SECOND ADMISSION

Local novocain. A small trephine opening was made in the left temporal region and enlarged to permit needle exploration in various directions. The bone was normal. The dura showed no inflammatory signs and was not under increased tension. The cortex appeared normal there being no signs of increased pressure. Exploration with the ventricular needle in various directions failed to reveal any abscess.

FURTHER DISCUSSION

The general diagnosis that I made in the first place I cannot amplify, that is, the recurrence of infection in the old operation from the biliary tract and the spread of that infection to the central nervous system and then according to the blood culture a septicemia of staphylococcus aureus. I hope Dr Mallory will not say that he did not examine the head.

DR TRACY B MALLORY. We did.

DR YOUNG. I do not believe there is anything in the X-ray plates that I can interpret.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Brain abscess
Cholecystitis
Right upper quadrant abscess

DR EDWARD L. YOUNG'S DIAGNOSIS

Cholecystitis
Acute pancreatitis?
Brain abscess
Septicemia, staphylococcus aureus

ANATOMIC DIAGNOSES

1 Primary fatal lesion

Adenocarcinoma of the pancreas with metastases

2 Secondary or terminal lesions

Abscess of the abdominal wall
Bronchopneumonia

Staphylococcus aureus septicemia
Infarct of the spleen
Chronic cholecystitis

3 Historical landmarks

Cholelithiasis
Pancreatic stones

DR MALLORY The post-mortem findings in this case were quite unusual and surprising. In the abdominal wall was the operative incision, which opened into a large pus-filled cavity lying between the rectus sheathes and replacing one segment of the rectus muscle, which had completely sloughed out. From the base of this a fistulous tract had spread down into the gall-bladder, which was greatly shrunken, the walls thickened. Two stones were left.

The surface of the liver showed obvious metastatic carcinoma. The primary lesion was found in the pancreas, which presented quite an unusual picture. You remember that the pancreas has two "anlages," one which comprises the head, body, and tail, and the other a small portion of the head, one supplied by the duct of Wirsung and the other by the duct of Santorini. In this case they were almost separate. The duct of Wirsung was entirely negative. The duct of Santorini was dilated, the wall greatly thickened, and it contained several pancreatic stones. The entire portion of the head was entirely changed over into carcinoma, which had not invaded in the slightest degree the lower portion of the pancreas.

There were metastases everywhere, a great many on the surface of the lungs, and where gross metastases were not found during life the microscope showed innumerable very minute ones. For instance, numerous glomeruli in the kidney showed metastases consisting of only four or five tumor cells, just filling one capillary. There was an infarct in the spleen, and although we were not able to demonstrate the cause of that, I suspect that metastatic tumor cells may have been at the base of it.

The brain findings were very few. There was the scar of the operation and of the various puncture wounds made with the exploratory needle, and on the right side, just external to the right ventricle, there was a small area of softening. That is the opposite side from what the neurological symptoms in general suggested. We found nothing on the left side, no tumor or abscess.

DR YOUNG Would that area of softening be enough to account for the symptoms as given?

DR MALLORY It hardly seems as though it could account for a good many of them. Nearly all his symptoms have suggested the left side of the brain, the weakness in his right hand, and so on. I have no explanation for that.

DR YOUNG There was no reason to believe that this carcinoma was based on the previous

biliary tract disease,—chronic irritation in the biliary tract?

DR MALLORY No. The common biliary duct was negative and the duct of Wirsung negative. The duct of Santorini of course had a separate outlet from the duodenum. I imagine the carcinoma was secondary to the inflammatory changes and obstruction of this duct.

DR CABOT Were the sinuses free?

DR MALLORY Yes. There was, however, a terminal septicemia and a slight degree of bronchopneumonia.

PROTEST DISCHARGE OF CHICAGO HEALTH COMMISSIONER

As an aftermath of the dismissal of Dr. Herman N. Bundesen, former Health Commissioner of Chicago, and his replacement by Mayor Thompson's personal physician, a surgeon with no public health training, a public statement has been issued by the most prominent figures in public health work in the United States, protesting against the influence of politics affecting the public health and welfare of the people at large.

The statement, which bears the signatures of eminent persons, including two university presidents reads in part:

Permanence of tenure for competent health officials is an absolutely essential factor in the protection of the public against preventable disease, and the case in question seems particularly flagrant in view of the extraordinary record of Doctor Bundesen, whose brilliant services have aroused nationwide admiration. Sacrifice of the lives of citizens of Chicago to political exploitation and personal whims is more than a local matter since unsanitary conditions in one community may react upon an entire continent.

The action of the Mayor of Chicago strikes a blow at the most fundamental principles of good government. It should meet with prompt and vigorous rebuke from all people of Chicago who care for the reputation of their city and it should stimulate citizens everywhere to see that city charters are amended so as to make such interference with good health administration impossible in their own communities.

Among those who signed the statement are: Haven Emerson, M.D., Professor of Public Health Administration, Institute of Public Health, College of Physicians and Surgeons, Columbia University, New York City; Livingston Farrand, M.D., President, Cornell University, Ithaca, N.Y.; William H. Howell, M.D., Director, School of Hygiene and Public Health, Johns Hopkins Hospital, Baltimore, Md.; Matthias Nicoll, Jr., M.D., State Commissioner of Health, Albany, N.Y.; William H. Park, M.D., Director, Bureau of Laboratories, Department of Health, New York City; Samuel C. Prescott, S.B., Head, Department of Biology and Public Health, Massachusetts Institute of Technology, Boston, Mass.; George D. Vincent, Ph.D., President, Rockefeller Foundation, New York City; Ray Lyman Wilbur, M.D., President, Leland Stanford University, Palo Alto, Calif.; C. E. A. Winslow, Dr. P.H., Professor of Public Health, Yale University, and Frankwood E. Williams, M.D., Medical Director, National Committee for Mental Hygiene, New York City.—*Mental Hygiene Bulletin*

The New England Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY
under the jurisdiction of the following named committee:

For Three Years

JOHN W. BARTOL, M.D. FREDERICK T. LILL, M.D.
CHANNING FREETHINGHAM, M.D.

For Two Years

HOMER GAGE, M.D. Chairman EDWARD C. STREETER, M.D.
EDWARD W. TAYLOR, M.D.

For One Year

WILLIAM H. ROPEY, JR., M.D. ROGER L. LEE, M.D.
ROBERT D. OSGOOD, M.D.

EDITORIAL STAFF

DAVID L. EDSELL, M.D.	STEPHEN RUSHMORE, M.D.
REH. HUNT, M.D.	ILAN ZINSSER, M.D.
J. H. P. SCHEFFLAND, M.D.	BENJAMIN WHITE, PH.D.
GEORGE R. MINOT, M.D.	HENRY R. VIET, M.D.
FRANK H. LAHEY, M.D.	ROBERT N. YEL, M.D.
SHIELDS WARREN, M.D.	

WALTER P. BOWERS, M.D. Managing Editor

ASSOCIATE EDITORS

GEORGE G. SMITH, M.D. WILLIAM B. REED, M.D.
JOSEPH GARLAND, M.D.

THE NEW HAMPSHIRE MEDICAL SOCIETY

PUBLICATION COMMITTEE

D. E. SULLIVAN, M.D. EMMET M. FITCH, M.D.
JOSEPH J. COBB, M.D.

THE VERMONT STATE MEDICAL SOCIETY

PUBLICATION COMMITTEE

WILLIAM G. RICKER, M.D. C. F. DALTON, M.D.
J. A. WALKER, M.D.

SUBSCRIPTION TERMS: \$6.00 per year in advance, postage paid for the United States; Canada \$7.05 per year; \$7.05 per year for all foreign countries belonging to the Postal Union.

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the Journal office, 16 Massachusetts Avenue.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The New England Journal of Medicine, 126 Massachusetts Avenue, Boston, Mass.

JOSLIN ON DIABETES

ELLIOTT P. JOSLIN, M.D.—which should signify Master of Diabetes—has in this issue of the JOURNAL a paper on ideals in the treatment of diabetes which should attract the attention and set to thinking the mind of every practitioner who has to do with this disease.

The intelligent use of insulin has without question revolutionized the treatment of diabetes and made possible the achievement of practical diabetic ideas, even if they do not yet include the cure of the disease. Health and diabetes are now compatible, youth and diabetes are now compatible, old age and diabetes are now compatible, coma before the advent of insulin but now even more so is an unnecessary complication resulting only from carelessness or ignorance on the part of patient or physician. The present *bête noir* of diabetes is arteriosclerosis and arteriosclerosis is the result of an overabundance of fat in the tissues or in the diet.

An example of the dangers of a high fat diet is quoted from the *American Journal of Medical*

Sciences. A mild diabetic with onset at the age of 45 years was studied for 13 years. On a low carbohydrate high fat diet his weight rose in his last 5 years of life from 97½ to 174 pounds. In coma 100 units of insulin was almost ineffective. At autopsy his arteries showed marked fatty infiltration and his tissues were literally steeped with fat.

"It is from an excess of fat in the tissues, I believe," Dr. Joslin continues, "diabetes most commonly begins and from an excess of fat in the tissues of diet diabetics, whether human or canine died formerly of coma, but today, at least so far as humans are concerned of premature arteriosclerosis."

Insulin was ineffective in this patient mentioned and this patient had edema. Insulin works most effectively in the dry patient, less effectively in the wet one and cholesterol always holds back water in the body.

Dr. Joslin does not believe in the unbalanced, high fat diet he believes that it predisposes to arteriosclerosis. He believes in a safe average carbohydrate intake of 100 grams, with a minimum of insulin and voices the undeniable truth that the diabetic watched lives, but the diabetic neglected dies.

THE RESPONSIBILITIES OF THE HOSPITAL STAFF

THE development of hospitals throughout all the larger towns and in many rural communities has been of tremendous advantage to physicians as well as to the public. The improved facilities, the opportunity for laboratory study, the concentration and systematization of work are obvious advantages. But aside from this is the great gain incident to contact among physicians. The patient is not the sole gainer from consultation and conference. The welding together of the physicians of any community into a hospital staff puts in their hands a power and influence which they may use or neglect as they determine.

The duties of a hospital staff are primarily to give to each individual patient the best possible care. But secondarily they must give to house officers and to medical students if any and to their associates all the benefits they can of their knowledge. Equally important is the duty to co-operate with the Trustees in doing all in their power to extend medical knowledge and aid in the maintenance of health.

The success of a hospital staff depends upon its ideals, its co-operation and its ability to work for progress with the trustees and the public. Much depends upon the organization of the staff and the executive committee of staff and trustees.

The actual details of administration rest of course, upon the superintendent, who must in turn be responsible to an executive committee. Meetings of the staff should be held at regular intervals for the discussion of professional topics. At these meetings administrative mat-

ters may also be considered. One or more representatives of the staff should meet with the executive committee of the trustees. It makes little difference whether these staff representatives have or have not a vote. Their influence must be exerted by convincing the lay members of the executive committee of the wisdom and reasonableness of the policies they advocate. If they can only convert a minority of the lay members of the board to their viewpoint it is usually unfortunate to force a policy by turning the scale through staff votes. In general the influence of the staff members is fully as great without a vote as with one.

The Staff must convince its Trustees that a stationary condition is always one of relative retrogression. There are always new needs in a modern hospital. This does not mean that every passing fad must be adopted but that whenever real progress is made the advantage must be seized.

The hospital must be made the centre of all health activities in the community it serves. The public must be instructed upon matters of health, by Staff and Trustees acting in co-operation. The hospital in the community must play as important a part in civic life as did the church in early colonial days. But there must be no division of influence. There can be no more certain method of dealing with cults and quackery than by the concerted action of the physicians of a hospital staff co-operating with the trustees to make the hospital fulfill all its functions as fully and ably as possible.

HOSPITAL SERVICE IN THE UNITED STATES

The Journal of The American Medical Association for March 24 contains an extremely valuable section of 72 pages which comprises the seventh annual presentation of hospital data by the Council on Medical Education and Hospitals. This year, for the first time, in addition to the annual presentation of statistical data, the Association's first Hospital Register is published.

This section contains the story of 6,807 hospitals and sanatoria built and maintained by various groups, and more than 80,000 physicians who supply them with medical services. It is notable that an almost unanimous response was elicited from more than 6,700 hospitals as a result of a questionnaire sent out by the Council. In all, 6,807 hospitals have been admitted to the Register. Of these 1,543 are unconditionally approved by The American College of Surgeons, and of these 1,543 hospitals, 609 are approved for interne training, and 292 for residencing in specialties. A group of 462 institutions are not admitted to the Register for various reasons.

According to types of service rendered, the registered hospitals are divided into general hospitals, nervous and mental hospitals, those for

tuberculosis, maternity hospitals, industrial hospitals, hospitals for convalescence and rest, isolation hospitals—which are increasing in effectiveness although dwindling in volume—children's hospitals, eye, ear, nose and throat hospitals, orthopedic hospitals, skin and cancer hospitals, hospital departments of institutions and others.

According to ownership or control they are divided into government owned hospitals (whether federal, state or local), church hospitals, fraternal hospitals, industrially owned hospitals, individual and partnership institutions and independent organizations.

Following an exposition of the requirements for the list of approved hospitals is published the actual register, and the section ends with a list of approved clinical laboratories with their essentials defined.

The Council on Medical Education and Hospitals, in preparing these lists, has undertaken a great labor but one of great value, not only in providing available and useful information, but in setting minimum standards of excellence for hospitals and laboratories.

SUGGESTIONS AND AN ANNOUNCEMENT

Boston has long been proud of the character and solidarity of its medical profession. We have been singularly exempt from cliquishness, almost always able to unite in the promotion of a good cause and free from the petty jealousies and bickerings that often befog the professional atmosphere of certain communities. Some would doubtless attribute this to a kind of provincialism about which they are pleased to chide us. If that be the cause it has had its compensations. In all probability the small geographic distribution of the bulk of the profession has had some thing to do with the cultivation of this desirable state of affairs. As our institutions have enlarged, our public health problems increased, the fields of professional activity narrowed and the number of doctors has grown there is greater divergence of interests and individuals find it more and more difficult to maintain those intimate contacts which characterized the less complex relations of a generation ago. The time is coming here, and its advent has been anticipated by the more far sighted, when some concerted effort must be made to devise machinery, whereby the unification of all our public health and professional activities may be continued. The incorporated state Medical Societies of New England are appreciating this and the idea has found expression in the Council of the New England States Medical Societies and in the adoption of a new name and a wider scope for this JOURNAL. In other metropolitan centers notably New York, Cleveland and Brooklyn this endeavor has been realized in the form of an Academy of Medicine. It is true that this suggestion has been broached here not so many years ago but the times were not ripe

for it then. It is also true that in effect some of the advantages of an Academy are being provided by one of our medical institutions today but with nothing of the efficiency which the idea is capable of generating under the auspices of an incorporated organization. Many helpful kinds of service could be rendered the local and visiting profession were such an institution in existence. As an illustration of this and in the hope that the service which the Boston Medical Library now offers may emphasize in a small way the advantage of a medical center for Greater Boston we would call attention to the fact that the Library receives each morning by nine o'clock the lists of operations to be performed on that day at the Boston City, the Deaconess, the Free Hospital for Women, the Massachusetts General and the Peter Bent Brigham Hospitals. A telephone call to Kenmore 1617 will supply information covering the operative work of the day.

THE AMERICAN MEDICAL EDITORS' ASSOCIATION

A STATEMENT of the history and purpose of the association appears on page 420.

As a record it has historical value and the fact that two New England men have been presidents of the association will be of especial interest in this section. The organization was active and influential in its earlier existence. The plans under way as set forth in the article indicate ambitions to make the organization an important factor in medical affairs.

If the association succeeds in its purpose with respect to standardizing medical education, medical licensing examinations, international reciprocity and the various other subjects under consideration as set forth in the announcement it will demonstrate an influence and force greater than most people believe to be possible in an organization of this type.

The suggestion that medical journals should be endowed is alluring and may be a worthy ambition, but we feel that medical journalism may to advantage be largely restricted to publications conducted by national, state and special societies with supplementary bodies engaged in scientific work such as the research organizations under the Foundations, Medical Schools and Hospitals.

The Independent Medical Journal may continue to flourish but the field is well occupied at the present time. It is extremely unlikely that large funds will be contributed to support medical publications which are not already endorsed or adopted as official organs by reputable organizations.

There are always opportunities for conferences among those engaged in serious work and the personnel of the American Medical Editors' Association gives promise of creditable activi-

ties but we hope that it will not attempt to duplicate work now being well done by other organizations.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

JOSLIN ELLIOTT P. A.B. M.D. Harvard Medical School 1895. Consulting Physician to the Boston City Hospital, Physician to the New England Deaconess Hospital, Clinical Professor of Medicine Harvard Medical School. Member of the American Society of Clinical Investigation. His subject is "Ideals in the Treatment of Diabetes and Methods for Their Realization." Page 379. Address 81 Bay State Road, Boston.

DEWIS JOHN W. A.M. Honorary, M.D. Harvard Medical School, 1894. Clinical Work 1906-7, Assistant Physician Boston Dispensary Out-Patient Department, Appointed 1927. Address 270 Commonwealth Avenue Boston. Associated with him is

MORSE, GEORGE W. A.B., M.D. Harvard Medical School, 1908. F.A.C.S. Surgeon in Charge, Brooks Hospital, Brookline, Medical Director of the Institute of Technology. Address 475 Commonwealth Avenue Boston. Their subject is "Primary Adenocarcinoma of the Duodenum." Page 383.

ADAMS JOHN D. M.D. Harvard Medical School 1902. F.A.C.S. Orthopedic Surgeon-in-Chief Boston Dispensary, Consulting Surgeon, Beverly Hospital, Jordan Hospital, Plymouth, Memorial Hospital, Brattleboro, Vt., and Sisters Hospital, Waterville, Me. Address 43 Bay State Road, Boston. Associated with him is

LEONARD, RALPH D. A.B., M.D. Harvard Medical School, 1910. Consulting Roentgenologist in the Brooks, Malden, Melrose and Cambridge Hospitals. Formerly Instructor in the X-ray Department of the Boston City Hospital, and in the X-ray Department of Tufts Medical School. Address 43 Bay State Road, Boston. Their subject is "Fracture of the Carpal Scaphoid." Page 401.

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY

Foster S. Kellogg M.D. Frederick L. Good M.D.
Chairman Secretary
Frederick J. Lynch M.D. Clerk

What is the treatment of Hemorrhage of the Newborn?

The treatment of hemorrhage of the newborn whether it be due to trauma or the hemorrhagic diathesis may be considered under two heads, general measures, designed to maintain the general welfare of the child, and speci-

fic measures aimed particularly to control hemorrhage and replace lost blood

It occasionally happens that the general measures are inadvertently neglected in the strict pursuit of the specific. The more important items of general treatment follow. *Rest* Handling should be reduced to the minimum and should be done with utmost gentleness. The baby should be protected from noise and strong light and should be isolated from other babies. The control of convulsive movements should be attempted by the administration of chloral by mouth or rectum and by the performance of lumbar puncture to reduce intracranial pressure. *Maintenance of body heat* It is very important to keep the body heat of hemorrhagic babies at the normal level. To secure this the quilted "premature jacket" and heaters of various types may be employed. *Prevention of dehydration* The great fluid loss in this condition further aggravated by the problem of feeding the baby by mouth makes it necessary to resort to frequent injections of solutions of glucose or normal salt into the rectum under the skin or into the peritoneal cavity. *Feeding* This is a very important element in the care of the hemorrhagic baby. If possible to obtain it breast milk should be used. If the baby swallows the problem is simplified, although administration of the food by medicine dropper, Bieck feeder or nasal tube may be necessary. If the baby does not swallow, feeding by gavage should be used.

Specific treatment of hemorrhage of the newborn resolves itself at present into the use of blood or blood elements for the purpose of increasing the coagulability of the blood of the infant. While good results have been reported from the use of animal sera and preparations of hemostatic and coagulating substances, human blood whole or citrated is the remedy par excellence for hemorrhage of the newborn.

Because of its availability, ease of administration and safety, whole blood should be the agent of first choice. It may be given intramuscularly or subcutaneously. Amounts of less than 20cc are of little value. Injections should be repeated every four to six hours until the hemorrhage appears to be definitely controlled. Transfusion of whole or citrated blood is technically difficult except to the expert and in cerebral hemorrhage may aggravate the symptoms by increasing intracranial pressure.

A very important and frequently neglected phase of the treatment is the prophylactic administration of whole blood to potential cases of hemorrhage of the newborn. The infants of toxic mothers, premature babies, those born of long, hard or dry labors or by operative delivery or from contracted pelvis, and the children of mothers who have had other hemorrhagic babies should be given injections of whole blood as soon after delivery as possible.

Questions of a similar nature to the foregoing will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

BOSTON MEDICAL LIBRARY

ALEXIS OF PIEDMONT, HIS SECRETS

THERE has apparently always been a call for books of household remedies. Many of those living today in the country have recollection of such works or at least have heard of their existence and use. At a time when doctors were relatively less easy to find than they are today and the family exchequer did not permit of their being called for every trivial ailment it was natural that there should be a greater call for such books. They seem to have helped to fill in the gap between the advent of a more scientific practice of medicine and the disappearance of the "medicine man" and his ilk. Absence of means of communication and slow methods of transportation, both of which factors put mankind more upon their own resources, made such treatises a great boon. They anticipated by a considerable time the "house physician" in a modern hostelry, perhaps in some cases without any greater jeopardy to the patients' chance of recovery. In the 16th century or thereabouts these books were commonly called, as this one is, "*Secrets*."

This particular one was printed for William Warde and dedicated by him to the Right Honorable Lord Russell, Earl of Bedford. It was a translation of an Italian work by the same name the author of which was Alexis of Piedmont. The date of the English printing was 1562. It had been already translated into French and Dutch. It contains in the first part chiefly, remedies for various derangements of the health but also directions for the making of many things useful for the housewife to know. These works appear to have been inspired by rather different motives than the translations of Culpepper and Salmon, the celebrated "irregular practitioners" who were seeking to exploit themselves quite as much as to serve the public, though the latter was their avowed aim.

The legend at the head of the first paragraph gives the keynote of the book. It reads as follows: "The manner and secret of conserving a man's youth and of holding back old age and to maintain a man always in health and strength, as in the fairest flower of his age." He then proceeds to give minute directions for compounding remedies to relieve various symptoms which he describes briefly, an example or two will suffice. "A perfect and proved remedy for them that be weak of stomake, and can not

kepe thev meals without vomitvng it up agayne

There are recommendations for the cure of stone in the kidney or bladder sores and wounds of all kinds "the rage or hydrophobia etc I presume the following is for Phthisis" "Against the greefe in the lungen and spitting of blood a thing experimented

After reading this book one better understands the therapy of our Allopathic progenitors and appreciates the very great service Hahnemann and his followers rendered mankind when they brought out the "high dilutions" principle of their Pharmacv

For those who are interested this volume will be on exhibition during the week of April 16th

INFANTILE PARALYSIS

The study of Epidemiology should attract more attention and more fully occupy the thought of men engaged in the practice of medicine than it does. It has been well within the memory of men in the mid period of life that this disease has taken on its epidemic character.

In 1900 there had been only two reports of cases of this sort in numbers which drew attention to this departure from its previous sporadic nature. One had occurred in the 80's in the Otter Valley in Vermont and the other in Gloucester. About the same time attention had been called to this same thing in Sweden. In the Vermont epidemic there had been about 130 cases and they were thought at first to have been Cerebro Spinal Fever. In Gloucester there were 66 cases and several of them had been diagnosed at first as Sunstroke that is before the paralysis appeared.

What the conditions are which make possible such a radical transformation in a disease from one which is sporadic with no mortality into one which is widespread and carries a high mortality not seeming to be checked by anything except absence of material upon which to feed is certainly worthy of persistent investigation.

One's thought naturally wanders back to the days of primitive man in seeking for an analogy. Our very remote human ancestors lived off the forests and streams and so long as food supply was plentiful they kept the peace and grew strong and virile. If they were thrown into conflict with neighboring tribes the survivors owed their preservation to their greater vigor in fighting men. If short rations or famine threatened they might easily fall from their high estate. Conflict was habitual for them. Could we know as much about the natural history of bacterial life it is possible we might learn much which would be helpful to our understanding of the vagaries of epidemic disease. It is to this phase of the subject of Infantile Paralysis and not to its surgical or serological management that the resources of the Library would invite your attention during the week of April 16th.

THE DOCTOR'S SADDLEBAG

THE GOOD PHYSICIAN

DISCIPLES of Aesculapins in the last few decades have seen many changes take place in the form and character of the professional activities to which they are in the main devoting their lives. Medicine was originally in its entire conception the healing art, in an endeavor to promote the success of this function many of its devotees from the earliest times have added to it the function of investigation. Others urged on by a compelling curiosity even if with no practical end in view, have made investigations into anatomy into physiology and into chemistry either the main activity of their lives or at least a very important part of it.

Generally speaking however, in his own eyes in the eyes of his colleagues and in the eyes of the world—which is more important—the physician was essentially the practitioner. His experience blossomed most fully only when it was put to the practical test of alleviating suffering his knowledge bore its best fruit only when it was directed towards the care of the sick. The good physician was seen and recognized as such in the consulting room, in the sick chamber and on the hospital ward. It was in this character that he exhibited and gave to mankind the results of his studies and of his investigations, if he had made them which were carried on more obscurely. Honored indeed were those who were equipped by training and by disposition to bring forth the fruits of their original work and lay them on the knees of their fellow men no less honored were those who simply availed themselves of the opportunity to put into practice each new discovery and to utilize in a practical form the fund of fresh knowledge which was constantly accruing to them as a result of the labors of those whose peculiar talents enabled them to add to the general fund of knowledge.

The Fifth Estate—that select group of intellectual laborers whose field of activity is the realm of pure science, and who have inherited it by a sort of divine right—will always have honor among us and of a high order, but always perhaps, it will be passed by, by the hurrying feet of the world which is looking for immediate results and for practical results, which has little use for theory and which sees its ideals only when the clouds are torn away or when emotional stress temporarily dissolves them.

We must not be blinded by the fact that the world at large is composed of common mortals, that it is not highly intellectual that it has few visions that it wants results of a practical nature and that it is more sensitive to the humanities and to the emotionalism of everyday life than it is to deductive reasoning. The appeal of pure science leaves it cold. There is no stigma attached to it for this, it is the world and we if we believe that we are on a different

fic measures aimed particularly to control hemorrhage and replace lost blood

It occasionally happens that the general measures are inadvertently neglected in the strict pursuit of the specific. The more important items of general treatment follow. *Rest* Handling should be reduced to the minimum and should be done with utmost gentleness. The baby should be protected from noise and strong light and should be isolated from other babies. The control of convulsive movements should be attempted by the administration of chloral by mouth or rectum and by the performance of lumbar puncture to reduce intracranial pressure. *Maintenance of body heat* It is very important to keep the body heat of hemorrhagic babies at the normal level. To secure this the quilted "premature jacket" and heaters of various types may be employed. *Prevention of dehydration* The great fluid loss in this condition further aggravated by the problem of feeding the baby by mouth makes it necessary to resort to frequent injections of solutions of glucose or normal salt into the rectum under the skin or into the peritoneal cavity. *Feeding* This is a very important element in the care of the hemorrhagic baby. If possible to obtain it breast milk should be used. If the baby swallows the problem is simplified, although administration of the food by medicine dropper, Breck feeder or nasal tube may be necessary. If the baby does not swallow, feeding by gavage should be used.

Specific treatment of hemorrhage of the newborn resolves itself at present into the use of blood or blood elements for the purpose of increasing the coagulability of the blood of the infant. While good results have been reported from the use of animal sera and preparations of hemostatic and coagulating substances, human blood whole or citrated is the remedy par excellence for hemorrhage of the newborn.

Because of its availability, ease of administration and safety, whole blood should be the agent of first choice. It may be given intramuscularly or subcutaneously. Amounts of less than 20cc are of little value. Injections should be repeated every four to six hours until the hemorrhage appears to be definitely controlled. Transfusion of whole or citrated blood is technically difficult except to the expert and in cerebral hemorrhage may aggravate the symptoms by increasing intracranial pressure.

A very important and frequently neglected phase of the treatment is the prophylactic administration of whole blood to potential cases of hemorrhage of the newborn. The infants of toxic mothers, premature babies, those born of long, hard or dry labors or by operative delivery or from contracted pelvis, and the children of mothers who have had other hemorrhagic babies should be given injections of whole blood as soon after delivery as possible.

Questions of a similar nature to the foregoing will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

BOSTON MEDICAL LIBRARY

ALEXIS OF PIEDMONT, HIS SECRETS

THERE has apparently always been a call for books of household remedies. Many of those living today in the country have recollection of such works or at least have heard of their existence and use. At a time when doctors were relatively less easy to find than they are today and the family exchequer did not permit of their being called for every trivial ailment it was natural that there should be a greater call for such books. They seem to have helped to fill in the gap between the advent of a more scientific practice of medicine and the disappearance of the "medicine man" and his ilk. Absence of means of communication and slow methods of transportation both of which factors put man and more upon their own resources, made such treatises a great boon. They anticipated by a considerable time the "house physician" in a modern hostelry, perhaps in some cases without any greater jeopardy to the patients' chance of recovery. In the 16th century or thereabouts these books were commonly called, as this one is, "*Secrets*".

This particular one was printed for William Waide and dedicated by him to the Right Honorable Lord Russell, Earl of Bedford. It was a translation of an Italian work by the same name the author of which was Alexis of Piedmont. The date of the English printing was 1562. It had been already translated into French and Dutch. It contains in the first part chiefly, remedies for various derangements of the health but also directions for the making of many things useful for the housewife to know. These works appear to have been inspired by rather different motives than the translations of Culpepper and Salmon, the celebrated "irregular practitioners" who were seeking to exploit themselves quite as much as to serve the public, though the latter was their avowed aim.

The legend at the head of the first paragraph gives the keynote of the book. It reads as follows: "The manner and secret of conserving a man's youth and of holding back old age and to maintain a man always in health and strength, as in the fairest flower of his age." He then proceeds to give minute directions for compounding remedies to relieve various symptoms which he describes briefly, an example or two will suffice. "A perfect and proved remedy for them that be weake of stomake, and can not

one in England and one in France have already been appointed to study this subject)

Committees to study 'Workman's Compensation', 'Pay Clinics', 'Commercial Laboratories', 'Open Hospitals', 'Medical Compensation', 'Drug Store Prescribing', 'Pharmacy and Therapeutic Products', 'Electrotherapeutic Apparatus', 'Prohibition', 'Committees on Legislation', 'Advertising Publicity', 'Policy', 'Public Health', 'Medical Economics' and so on all studying certain questions and working out solutions for the problems involved for the advancement and elevation of the medical profession and of medical journalism

The officers of the American Medical Editors Association are working with might and main for the benefit of its members and deserve their full support through the Journals they edit in advocating the policies the Association stands for

PAST HISTORY

In 1869 the editors of medical journals in the United States, desiring to cultivate professional courtesies to facilitate the conduct and general management of their journals to promote their interests their usefulness and make them a still greater power for professional and popular good and especially to advance the interests of medicine united together and organized the American Medical Editors Association

The idea originated with Dr Theophilus Parvin who at that time was Editor of the *Western Journal of Medicine*. The first meeting was held May 6th 1869 at which time a preamble and articles of association were presented. At this first meeting Dr N S Davis editor of the *Chicago Medical Examiner* and the father of the American Medical Association was elected President

The annual meeting for 1870 was held at Washington, D C, at which time Dr Horatio R. Storer, editor of the *Journal of the Gynecological Society* was elected President for 1870-1871

The meetings for the years 1870-1871 were devoted to Committee Reports et cetera with the exception of the adoption of a resolution introduced by Dr N S Davis to the effect that The social educational and scientific interests of the profession would be greatly promoted by a more complete organization in every State and district in our country such organization being calculated to not only elicit but diffuse knowledge and also to afford the most efficient means of promoting concerted action on all important questions of medical education and progress

For the years 1871-1872 Dr B F Dawson editor of the *American Journal of Obstetrics* was President, and under his administration a resolution was introduced offering an annual prize of \$100 for the best essay on some subject to be decided upon at each annual meeting the competition to be open to all members of the Society

Dr Theophilus Parvin editor of the *Western Journal of Medicine* and the originator of this Society was elected President to serve during 1872-1873. Dr W K. Bowling editor of the *Nashville Journal of Medicine* served as President 1873-1874. 1874-1875 found Dr W S Edgar editor of the *St Louis Medical and Surgical Journal* serving as President. He was succeeded in 1875-1876 by Dr A. M. Bell editor of *The Sanitarian*. This meeting was

devoted exclusively to the reading of papers advising a higher standard of requirements for admission to the profession of medicine, the outcome of which was a resolution advocating and advising a three years course in medicine, and endorsing a preliminary entrance examination for students

1876-1877 Dr Horatio C Wood editor of *The Medical Times*, was chosen President. He was followed in 1877-1878 by Dr J C Gray of Utica N Y, who presented at his presidential address a paper upon 'Lunatic Laws endorsing and advocating a change of the statutes governing the management of the insane by our public institutions. As the result of the agitation created by his address many changes were made in the laws of various States in accordance with the suggestions embodied in his paper

Dr William Brodie editor of *New Preparations* presided as President in 1878-1879 at which time he presented a paper upon 'Duty, Scope and Destiny of American Medical Journals, and it is to be regretted that the archives of our Society do not contain a copy of his address for it would be interesting to know how well he prognosticated the condition existing today as well as how we have met his ideals of duty and scope. At this meeting a resolution was passed as follows: 'We condemn the advertising of nostrums patented and copyrighted articles in our journals'

In 1879-1880 Dr S T Powell editor of the *Southwestern Medical Record* served as President. For a number of years following this meeting the Minutes of each session are so incomplete, that no facts of interest are obtainable however from a few fragmentary scraps in the possession of the Society we judge the social feature of the Association was paramount

The records show that Dr I N Love editor of *The Medical Mirror* served as President in 1890-1891. Dr F L Sim editor of *The Memphis Medical Monthly* 1891-1892. Dr Frank Woodbury editor of *THE BOSTON MEDICAL AND SURGICAL JOURNAL*, 1892-1893. Dr J C Culbertson editor of *The Lancet Clinic* 1893-1894. Dr C H Hughes editor of *The Alienist and Neurologist* in 1894-1895. Dr John B Hamilton editor of *The Journal of the American Medical Association* 1895-1896. Dr Geo M Gould editor of *Medical News* in 1896-1897. Dr Hobart A Hare editor of *The Therapeutic Gazette* 1897 and 1898. Dr Thomas H Hawkins editor of *The Denver Medical Times* 1899-1900. Dr Alexander Stone editor of *Northwestern Lancet* 1900-1901

It was not until the meeting of 1901, under the presidency of Dr Alexander J Stone that the Society took on any semblance of a regularly prepared program of papers presented

At the next meeting Dr Winslow Anderson editor of *The Pacific Medical Journal* was chosen President for 1901-1902. From 1902 until 1907 the history of our Association is within the memory of us all. Through untiring energy and hearty cooperation of Dr C E de M Sajous (*Sajous Encyclopedia*) President for 1902-1903. Dr H N Moyer editor of *Medicine* President 1903-1904. Dr Henry Waldo Coe editor of *The Medical Sentinel* President 1904-1905. Dr James Evelyn Pilcher editor of *Journal Association of Military Surgeons*, President 1905-1906 and Dr C F Tavior editor of *The Medical World* President 1906-1907 the membership in the Association was increased from forty-two names to 193 editors

plane, must guard our footsteps, it is not the world that is queer, it is ourselves

The modern development of science and the modern development of medicine led more and more into the laboratory, and quite rightly the laboratory and the results of its workers began to assume a position of great importance in our eyes. More and more space began to be developed in our medical schools for scientific investigation, and more and more our hospitals began making over their storerooms, their garrets and their cellars into abodes for the muse that sings of bacteriolytics and colorimetric calibrations. The young man with his footsteps hesitating on the threshold of professional life was often lured into these abodes of the intellect and saw in them a shelter, for a time, and perhaps permanently, from the cold realities of practice, of dollar competition and of individual aggressiveness.

Learned societies came into being and the seats of the mighty became occupied by those who, intrigued by science and the demoralizing intoxication of publication, and blinded to the one obvious goal of Medicine—the application of knowledge to the alleviation of suffering—saw but one royal road to preferment. The result of this has been, in our day, the engendering of a false and warped attitude towards the practice of medicine. The laboratories have wooed and won, not only those pure searchers after truth whose workshops they should be, but many young men, unsuited in temperament, with the fires of inspiration forever unkindled, who should be doing yeoman service in the front lines, rather than sacrificing innocent and costly laboratory animals on the ash-choked altars of scientific Mammonry (if such a phrase may be coined).

No other vocation than medicine has raised these false standards of service. The lawyer, successful, useful and honored, is he who practices his profession with honesty and serves his community as a public-spirited citizen should. The upright merchant gives value received for his goods, upholds his church and works for civic betterment. The true physician may or may not investigate the causes of disease, according to his bent, but if his bent is not in that direction equal honor, equal dignity and equal worth is his if he practices his profession with diligence and ability and gives of himself to his patients and his community. He is the good physician.

MISCELLANY

LUNCHEON IN CONNECTION WITH THE CANCER CAMPAIGN

Dr. W. A. Evans, of Chicago, Professor of Public Health at Northwestern University Medical School, and well known health columnist; Dr. I. D. Rawlings, Commissioner of Health of Illinois; and Dr. A. H. Kegel, Health Commissioner of the City of Chicago, will speak at a luncheon being arranged by the State Department of Public Health at the Hotel Statler on Monday, April 23rd, at 12:30. The Cancer Campaign,

inaugurated jointly by the Massachusetts Medical Society, the American Society for the Control of Cancer, and the Department of Public Health will be opened in Boston by a public meeting at Symphony Hall, at which the Governor will speak and by meetings in other cities that evening.

This luncheon is called in order that in advance of the campaign, professional groups may have an opportunity to meet these distinguished visitors. Such public health workers as practicing physicians, staffs of boards of health, nurses, social workers, nutritionists and the like who are interested in attending may obtain tickets by writing to Room 546, State House, Boston, and enclosing a check for \$1.50 made out to Dr. Mary R. Lakeman, who is organizing the meeting for the Department.

In addition to a discussion of cancer control, other vital public health problems will be touched on. The Department will welcome suggestions from those planning to attend as to subjects of particular interest although there is no guarantee that the suggestions will be accepted.

AMERICAN MEDICAL EDITORS' ASSOCIATION (FOUNDED IN 1869)

PRESENT ACTIVITIES AND PAST HISTORY

With the death of the last President, Dr. Henry O. Marcy, the American Medical Editors' Association became inactive and remained so for five years. At the time of Dr. Marcy's death, one hundred and seventeen editors were on the roster.

Early in January 1928, the present President, Dr. H. Lyons Hunt, called a meeting of a few of the New York editors to discuss the advisability of reviving the Association. The vote of those present was unanimous that this should be done.

That a need was felt for the organization, can best be demonstrated by the fact that not only practically all members of the old Association came in, but over one hundred new members made application so that today the American Medical Editors' Association is stronger and more powerful than it has been in its entire history.

As the organization swung into power, numerous meetings were held, officers elected and committees appointed to study and promulgate a tentative platform representative of the American Medical Editors' Association. Just how the entire Association will stand on these subjects will largely depend on the information gleaned on each by the committees appointed.

That the Association is functioning with enormous activity, is shown by the fact that committees have been appointed to study and advocate a stand for the Association on the following subjects: "Medical Journal Endowment Fund" (This is a rather new idea but there seems no reason why medical schools and hospitals should receive endowments while medical journals and those who run them, often at considerable personal sacrifice, should not look to share in a central endowment fund. Certainly the medical journals constitute one of the greatest forms of medical instruction and teaching in the country and through the profession are of untold value to the health of the nation.)

Committees have been formed to study ways and means of "Standardizing Medical Education and Standardizing Medical Licensing Examinations," "Bringing About International Medical Reciprocity," (Four Committees: one in Canada, one in the States

ability in a hospital the plea is made that neither the hospital or staff doctor should charge the insurer or the consuming public more than the patient can personally pay if he is not insured. From 40 to 45 per cent of the population of Massachusetts belong to the wage earning self supporting self respecting group. Their earnings support 65% of the population.

Is it conceivable that the Massachusetts Legislature which has grown so considerate of the susceptibilities of those seeking public aid because of poverty that the name *pauper* has been stricken from the official record would subject this large group of industrial workers to the necessity of seeking charity from community hospitals either for hospital service or medical care? When emergency cases are given first aid for humane reasons must the trustees defend their rights when they classify patients protected by insurance as not eligible for either a charity hospital service or free medical service from the staff? The burden of caring for these patients no longer rests on the worker unaided but on the consuming public not merely local but nation and world wide in its ramifications.

Acceptance of charity is an indication of dependence or greed. Should the injured worker be compelled to accept either? Under the law the worker surrenders his common law right against both the employer and the physician. In its place the burden of his care is placed elsewhere with the guarantee of the State Law that the insurer shall furnish adequate and reasonable medical and hospital service. To claim that under the working of the Compensation Law the insured worker still retains his former economic status dependent often on private charity is to confess the law a failure. If the law was not passed to aid the worker as its most important feature for whose benefit was it enacted?

The popular conception of its workings is well expressed by the Special Commission of 1926 reporting to the Legislature of 1927 P 5. The principles of Workmen's Compensation are today almost universally accepted as the proper basis for relieving the misfortunes resulting from industrial accidents and doing justice to injured employees.

P 6 Workmen's Compensation is an exchange of the injustice of employer's liability laws with their irresponsible verdicts their legal technicalities too often inviting the interference of lawyers and their delays too often amounting to denials of justice for a speedy administrative determination of the merits of each case. It is likewise an exchange of the uncertainties of employer's liability laws with their incalculable and therefore intolerable burden of industry for the calculable and predetermined expense of compensation and medical care which therefore may be counted among the annual expenses of industry and passed on to the product.

To illustrate the status of the worker protected by insurance and one without it let us suppose that John Jones Jr. breaks his leg, he alone being responsible. The police ambulance takes him to the nearest hospital. The staff doctor Timothy Trusting Dexter named for a puritan ancestor sets his leg. By inquiry the hospital authorities classify his financial ability to pay his bills. If J. J. J. is able to pay both hospital and medical charges most community hospitals recognize the right of the doctor

to charge a fee. If J. J. J. is eligible for partial or full charity or public charity the staff doctor voluntarily contributes his services gratis. If J. J. J. breaks his leg working for an employer protected by insurance both the hospital and the staff doctor claim the right to collect from the insurer reasonable charges for adequate service. Does the fact that J. J. J. *uninsured* received charity treatment warrant the conclusion that his status *insured* entitles the insurer to the benefit of an equal charity? The insurer is paid to protect him from the financial burden of his accident and the worker has earned his right to afford service by suffering his accident.

The law applies and the department acting under it rules on questions affecting the *insured* worker not the *uninsured*. Insurance of every kind is designed to lift the burden of accident, loss or misfortune. The charity extended by most charity hospitals comes not from the general public, but from voluntary contributions held in trust for some specific purpose. The law as hospitals and the medical profession interpret Sec. 30 transfers the burden resulting from accidents incident to production from the shoulders of the individual worker who was previously often obliged to seek charity provided by the few to the consuming public. Under conditions prevailing in Massachusetts during 1925 this burden would average \$20 for \$100 worth of manufactured products. See data Annual Report of the Department of Labor and Industry for 1926 page 56. Also Annual Report Insurance Commissioner Part 11 1926 page 122 table Y.

The viewpoint of a majority of the hospitals of the State doing industrial work is shown by replies received from a questionnaire sent out last December by a Committee of staff doctors from South Middlesex District Medical Society and from information from staff doctors connected with hospitals not reporting. These replies disclose the fact that excluding the teaching hospitals and a few large municipal hospitals where conditions render it difficult for staff doctors to render a direct personal service 33 hospitals located in the largest industrial cities now classify patients protected by insurance as private or semiprivate. There are 12 hospitals in the industrial towns doing the same thing. About 10 more are considering such action by their respective trustees at the present time. There are 10 or more small hospitals not heard from. That this classification is the only fair one for the small hospital without an intern service and where the staff doctor must give a personal service is generally recognized by both hospital trustees and staff doctors. In its practical working most insurance companies recognize this fact.

G. M. B. (M.D.)

THE AMERICAN MEDICAL ASSOCIATION CONFERENCE ON PUBLIC HEALTH

(From Our Regular Correspondent)

April 3 1928

Clinics health demonstrations and public health surveys were discussed in what to an impartial observer seemed like a somewhat truculent manner at the second annual conference on public health called on March 30 and 31 1928 by the Board of Trustees of the American Medical Association. The meeting held in Chicago was attended by nearly 100

representing 122 medical journals, the best of all the medical journals in both the United States and Canada

Among the other well known medical men who devoted themselves to the interests of the Association and the ideals it stood for, serving in the Presidential Chair of the Society were Dr T D Crothers editor of *The Quarterly Journal of Inebriety*, 1907 1908 Dr W A Young editor of *Canadian Journal of Medicine and Surgery*, 1908 1909 Dr J MacDonaid editor of *American Journal of Surgery*, 1909 1910 Dr Walter Wyman, 1910 1911 Dr Thomas L Sredman, editor of *The Medical Record*, 1911 1912 Dr E A Vander Vee editor of *Albany Medical Annals* 1912 1913 Dr H Edwin Lewis editor of *American Medicine* 1913 1914 Dr Edward C Register, editor of *Charlotte Medical Journal*, 1914 1915 Dr Geo M Pielsoi editor of *American Journal Medical Sciences* 1915 1916 Dr Geo W Kosmak editor *American Journal of Obstetrics* 1917 1918 Dr Seale Harris, editor *Southern Medical Journal* 1918 1919 Dr H S Baketel editor *Medical Times*, 1919 1920 Dr Frank C Lewis *International Journal of Medicine and Surgery*, 1920 1921 Dr Henry O Maicy, editor *Annals of Anatomy and Surgery*, 1922 1923

The American Medical Editors Association took an initiative part in shaping the policy of the medical profession as an organized body and its influence for the elevation of medical standards. The effort to elevate the standard of preliminary education for those desiring to take up the study of medicine. The necessity for a comprehensive list of the names of regular practitioners, with their schools and date of graduation. The State and district organization. Agitation for a three years' course at medical colleges and a preliminary entrance examination for students. Changes in our lunacy laws regarding the handling of the inmates of our public institutions. Condemnation of nostrums and patent medicine advertising.

The American Medical Editors Association was the source from which many reforms for the advancement and betterment of the medical profession sprang as well as ideas some of which did not take concrete form until nearly forty years after their promulgation.

RECENT DEATH

ROLLINS—DR EDWIN THEODORE ROLLINS died at his home in Jamaica Plain after a long illness March 30 1928 at the age of sixty. The son of Fitzhugh Smith Rollins and Augusta Lavinia Hanson Rollins he was born in Newton Mass. had his education in the schools of his native town and at Harvard Medical School where he received his M.D. in the class of 1902. After serving as house officer at the State Infirmary at Tewksbury for a year and a half he settled in Jamaica Plain.

During the World War Dr Rollins was examining physician for the local draft board serving with Judge Murray and Judge Leverone and at one time he was head of the Red Cross for the Jamaica Plain district. He also had been chairman of the Parents Association. He was a member of the American Medical Association Massachusetts Medical Society and the Norfolk District Medical Society and he belonged to the Daniel Hersey Lodge of Odd Fellows

of Jamaica Plain. At one time he was president of the Elliot Club of Jamaica Plain.

Dr Rollins is survived by his wife who was Susan Gerrish of Chelsea, and by two daughters.

CORRESPONDENCE

THE STATUS OF THE INJURED WORKER INSURED UNDER MASSACHUSETTS COMPENSATION LAW

It may be helpful to refer to House No 300—1911 signed by a commission reporting in 1911 with the following membership: James A Lowell, Amos T Saunders, Magnus W Alexander, Henry Howard and Joseph A Parks.

Compensation Laws are founded on the principle that the whole community for which production is carried on should bear the burden of *all the costs of production* and that the cost of an industry in life, limb and human suffering should be met by some system of insurance and then charged against society as consumers of the product of industry.

Section 30 of the present law says: "During the first two weeks and in unusual cases or cases requiring specialized or surgical treatment, in the creation of the department for a longer period the insurer shall furnish the employee adequate and reasonable medical and hospital services." The law also requires equal service when the employee selects his own physician. While the law places a part of the burden for lost time on the worker he is guaranteed adequate and reasonable and necessary hospital and medical service from the time the injury is received. The act in no way suggests that this service is to be measured by the size of his weekly wage or his economic status, or that the insurer or the consuming public are entitled to charity rates for hospital service. The worker who takes the risk of losing his life of being permanently maimed by the loss of an eye a hand an arm or a leg is to receive the needed medical and hospital service to save his life if possible and rehabilitate him as far as possible.

The report of the Department for 1926 shows that while there were over 116,000 reported accidents over 74,000 received medical service only and that over 54% of the tabulatable injuries were within the two weeks period. Every sense organ and member of his body is the worker's own to be cherished and jealously guarded as his life's capital.

An insight into the risk the worker takes is shown by the report of the Accident Board for 1926 the latest published. There were 313 deaths and 1158 with a permanent partial disability. These deaths were not immediate but followed simple abrasions or cuts numbering over 31,000 resulting in 31 deaths, 21 from infection. Nearly 17,000 fractures and sprains resulted in 109 deaths, while unclassified accidents resulted in 126 deaths. As the result of 1127 injuries there were the amputation of 84 eyes, 55 hands, fore arms, or arms, and 21 feet or legs.

Is not the lowest paid worker suffering from any of these injuries entitled to a personal, intimate, responsible and reasonably paid medical service? For less serious cases outside the hospitals and for prearranged private service in a hospital medical service is paid for, but for this most serious group of cases demanding time, skill and personal respon-

BOSTON MEDICAL HISTORY CLUB

The next meeting of the Boston Medical History Club will be held at the Boston Medical Library on Friday, April 13th at 8 15 P M Annual meeting with election of officers

PROGRAM

Dr Isador Coriat Why Did Harvey Ascribe the Discovery of the Circulation of the Blood to Galien?
Dr George Sartori Muslim and Jewish Science

BOSTON MEDICAL HISTORY CLUB

The Boston Medical History Club in conjunction with the Harvard Medical Society will meet on Tuesday, April 24th at the Peter Bent Brigham Hospital, at 8 15 P M

Program—William Harvey, by Dr Archibald Macleod Librarian, New York Academy of Medicine Physicians and medical students cordially invited to attend

THE MEETING OF THE NEW ENGLAND PEDIATRIC SOCIETY

The one hundred and eighth meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, April 13 1928, at 8 15 P M

The following paper will be read The Results of the Use of the Calmette Tubercle Bacillus Vaccine in Infants and Animals, William H. Park, M.D., New York.

WILLIAM W HOWELL, M.D. President
RANDOLPH K. BYERS, M.D., Secretary

BOSTON CITY HOSPITAL STAFF CLINICAL MEETING

Cheever Surgical Amphitheatre, Saturday April 14 1928 at 11 A. M

Demonstration of cases by members of the Medical and Surgical Staff

Discussion of the cases invited.

Physicians medical students and nurses invited

JOHN J DOWLING, Superintendent

SOUTH END NEIGHBORHOOD MEDICAL CLUB

The next meeting of the South End Neighborhood Medical Club will be held at the office of the Boston Tuberculosis Association 554 Columbus Avenue, Boston on Tuesday April 17 1928 at 12 noon

The speaker will be Dr Elliott P Joslin Professor Harvard Medical School and Physician 81 Bay State Road, Boston. The subject will be "Treatment of Diabetes.

All physicians are cordially invited The usual luncheon will follow

SUFFOLK DISTRICT MEDICAL SOCIETY

BOSTON MEDICAL LIBRARY—JOHN WARE HALL

Wednesday April 25 1928 at 8 15 P M

ANNUAL MEETING

Business Election of Officers
Subject of the evening "Problems of Obesity"
Prof Julius Baner, University of Vienna, Austria.

Charge a fee If J J J J
Dr charity or public charity Drs George C Smith,
charitably contributes his service James P O'Hare
breaks his leg working for Medicine in the Uni
or insurance both the hospital beginning of his career
claim the right to collect from truck he has continued
able charges for adequate achievement is raising the
J J uninsured receive to appreciate the significance
ant the conclusion that In this line of work he is
de insurer to the base most prominent man on the
insurer is paid to the most prominent man on the
n of his accident
ht to unpaid patients after the meeting
The law applies ALLIOTT P JOSLIN, M.D., President
rules on ARTHUR H CROSBIE, M.D., Secretary
the uni

MEMORIAL OF THE AMERICAN ASSOCIATION FOR THE STUDY OF GOITER

The American Association for the Study of Goiter consisting of Internists Pathologists, Radiologists etc. as well as Surgeons, will hold their 5th annual Conference on Goiter in Denver, Colorado, June 18th 19th and 20th

Several men from foreign countries have signified their intention of attending Professor Breithner of the Von Eiseberg Clinic, Vienna and Professor Albert Kocher of Berne, Switzerland have accepted places upon the programme

Addresses and discussions on Prophylaxis Medical Treatment, Endemic Goiter and Cretinism from the Public Health Standpoint, are on the programme for the first afternoon

Pathology various phases of Surgical Treatment, etc., will be considered the last two afternoons

All members of State Medical Societies are invited to attend

Dr Gordon S Fahrni of Winnipeg Canada is the President and Dr Kerwin Kinard of Kansas City is Vice President.

NEW ENGLAND ASSOCIATION FOR PHYSICAL THERAPEUTICS

The next regular meeting of the New England Association for Physical Therapeutics will be held at the Boston Square and Compass Club 448 Beacon Street, Boston Mass April 18 1928

Dr Reginald Fitz of Harvard will read a paper on Arterio sclerosis

Dr John P Sutherland of Boston University will read a paper on Cardio renal Disease as influenced by High Frequency Saturation Shown by Basal Metabolism

The discussion will be opened by Dr Wm Duncan Reid and Dr Arthur H Ring

A table d hôte dinner will be served at 6 30 p m at the regular price All regular physicians are welcome

G W DICKINSON M.D., Sec y
89 Somerset St. Winthrop

CLAUDE L. PAYZANT M.D. Pres
76 Boston Ave., W Medford

SUFFOLK DISTRICT MEDICAL SOCIETY

The Censors of the Suffolk District Medical Society will meet for the examination of candidates at the Medical Library No 8 The Fenway Thursday May 3 1928 at 4 00 o'clock.

Candidates should make personal application to the

persons, including a large national voluntary health promoting health demonstration, and a few physicians from New England, State Health Officers, known medical men whose interests of the Association, as a professor, serving in the President of the Life Insurance Company, Dr. T. D. Crothers.

The conference was opened on Inebriety, 1907 it analysis of free and pay clinics of *Canadian Journal*, Ph.D., of the New York Academy, Dr. J. MacDonnell Corwin suggested that a duty was being performed by the maintenance of free clinics. Thomas L. Sredall percentage of individuals who are in 1911-1912. Dr. Dord private medical care. This paper was read by one on the same subject by Dr. L. L. Blair of President of the Ohio Medical Society. After his remarks about doctors of philosophy and their qualifications to discuss medical subjects, Dr. Bigelow launched into a fiery denunciation of clinics where individuals of favorable economic capacity were accorded free treatment. He characterized such a system as one which tended to pauperize the people and sovietize the nation.

About a dozen persons discussed these two papers in a rather vigorous and at times vehement manner. Alleged selfishness of physicians was criticised, and the exploitation of clinics was decried. The altruism of the medical profession was praised and the value of clinics was asserted. State medicine was declared by some to be a bugaboo and by others to be a real menace.

The scope, functions, and methods of the four health demonstrations of the Commonwealth Fund were next set forth in an interesting and thorough manner by Mr. Courtenay Dinwiddie. After he had finished, Dr. George Smith and Dr. Charles Keller related incidents which in their opinions, had occurred in connection with another health demonstration at Mansfield, Ohio, and which they believed had had a tendency to react to the detriment of the medical profession.

In the slightly torrid discussion which ensued, several speakers, including Dr. L. R. Williams, Mr. Homer Folks, and Mr. John A. Kingsbury described the difficulties of the Milbank Memorial Fund health demonstration in Cattaraugus County in securing the cooperation of the medical profession there.

The paper on public health surveys by Dr. R. G. Leland of the Bureau of Health and Public Instruction of the American Medical Association brought out a number of significant facts, but did not elicit much controversial discussion. Dr. Leland pointed out that during the past twenty years 3781 surveys on 56 different public health subjects had been made by 30 national organizations, 42 State boards of health and 48 individuals. Of these, the largest number had been conducted by the United States Public Health Service with 1921 to its credit.

Harmony eventually succeeded the early violence of the meeting and the conference closed after a resolution had been unanimously adopted to the effect that a committee should be appointed by the chairman, Dr. W. S. Thayer, to consider the problems involving in reconciling the views of practitioners of medicine and those of the sponsors of health demonstrations and other socio-medical and medico-economic experiments.

AMERICAN MEDICAL ASSOCIATION

COUNCIL ON PHARMACY AND CHEMISTRY

Editor NEW ENGLAND JOURNAL OF MEDICINE

In addition to the articles enumerated in our letter of February 25, the following have been accepted:

Adohr Creamery Co.

B. Acidophilus Milk—Adohr

Parke, Davis & Co.

Solution Ephedrine Sulphate—P. D. & Co., 3 per cent

Yours truly,

W. A. PUCKNER, Secretary

Council on Pharmacy and Chemistry

NEWS ITEMS

A LARGER SEAL SALE—The Christmas Seal Sale conducted by the Boston Tuberculosis Association netted \$54,600 which is the largest amount ever received by this Association.

The Association is planning to care for more children at the Prendergast Preventorium.

THE NOMINATION OF DR. JAMES H. WALSH—Governor Fuller has sent the nomination of Dr. James H. Walsh of Fall River as Associate Medical Examiner to the Council to fill the position made vacant by the promotion of Dr. F. R. Barnes to the position of Medical Examiner.

NOTICE

Professor Bruno Bloch, Director of the Dermatological Clinic, University of Zurich at Strasbourg, will lecture at the Harvard Medical School at 5 P. M. Monday, April 16. His subject will be "Formation of Pigment in the Skin."

REPORTS AND NOTICES OF MEETINGS

MASSACHUSETTS GENERAL HOSPITAL

A Clinical Meeting of the Staff of the Massachusetts General Hospital will be held in the Administration Building, Fruit Street, on Thursday, April 12, 1928 at 8:15 P. M.

PROGRAM

- (1) Dr. C. A. McDonald: Demonstration of some unusual ocular manifestations of encephalitis.
- (2) Dr. S. Biddle: Pneumorrhachicentesis, with demonstration of X-ray plates.
- (3) Dr. George Clymer: Local fat atrophy following insulin injection.
- (4) Dr. Jacques DeBusscher: Chloroform therapy in trigeminal neuralgia, tics and migraine.
- (5) Dr. J. S. Hodgson: Chordotomy for the relief of pain.
- (6) Dr. W. J. Mixter: Alcohol injections in angina pectoris.
- (7) Dr. H. C. Solomon: Tryparsamide and malaria in the treatment of neurosyphilis. Alternate subjects: Dr. C. S. Kubik: Progressive bulbar palsy. Drs. J. B. Ayer and George Tobey: The cerebrospinal fluid in the diagnosis of lateral sinus thrombosis.

Physicians, medical students and nurses invited.

COMMITTEE ON HOSPITAL MEETINGS

The New England Journal of Medicine

VOLUME 198

APRIL 26, 1928

NUMBER 10

ORIGINAL ARTICLES *Page No. 427-476*

CANCER*

continuing

BY ROBERT B. GREENOUGH, M.D., F.A.C.S.I.

THE medical profession as a whole is inclined to feel a high degree of pessimism in regard to cancer. The practising physician is fully aware of the lack of success which has attended all of the attempts to demonstrate a specific bacterial or other cause for the disease. He views its gradual but steady increase in the mortality statistics with a helpless and hopeless feeling, and he judges from the reports of the most progressive clinics, that the end-results of present day methods of treatment are very, very disappointing. That these conditions do exist and that they warrant some degree of pessimism cannot be denied, but this is far from being the whole story. More has been learned about cancer in the past twenty-five years than in any other period of medical history, great advances have been made in its treatment, both by radical surgery, and by the newer agencies of radiation and electro coagulation, and more effective methods of employing these agents are being developed every day. What is more, the attitude of mind, both that of the medical profession and that of the public has changed. No longer is cancer a word to be shunned and evaded. Cancer is recognized as a disease to be discussed, diagnosed and given treatment like any other disease, and indeed in many instances with far greater prospect of relief than many of the other diseases of advancing years. It is probable that no small part of the increasing death rate from cancer is due to the fact that so many deaths from the other more readily controlled diseases have been eliminated, and thus a greater number of persons attain the age when cancer occurs than ever did before. Life Insurance statistics indicate that an average of eight years has been added to human life in the last twenty-five years, and this has raised the expectation of life from forty-nine to fifty-seven, just the period in which cancer is most likely to attain its greatest harvest.

Innumerable attempts have been made to determine a bacterial or protozoan organism as a cause for cancer, but up to the present time none

has been found which could be accepted by the scientific world as capable of producing the disease. The most recent development along this line is the ingenious hypothesis advanced by Dr. W. E. Gve, of London, which is based upon the idea that an ultra-microscopic organism combined with a specific chemical factor is involved in the production of the peculiar tumor of fowls known as the Rous sarcoma. This tumor, unlike cancer as it is seen in other situations, can be transmitted by material passed through a Berkefeld filter and apparently without the direct transfer from one animal to another of whole tumor cells. Dr. Gve's experiments have roused the greatest interest throughout the scientific world and many attempts have been made to repeat his work, but as yet without complete and positive confirmation. It is very probable that from this work further light may be shed upon the problem of malignant disease but it must be remembered that the Rous tumor is one which is notably different from human tumors, and the direct application of this theory to the human cancer problem is at present quite unjustified.

In spite of the fact that no specific cause for cancer has been as yet established, many interesting and important facts, have been discovered in regard to the disease in the past few years. By means of experimental work with animals including spontaneous and inoculated tumors facts in regard to heredity and to immunity have been established that throw light upon the cancer process. It appears from Mand Slve's experiments that the soil in which the tumor grows or from which it springs, may be influenced enormously by inherited characteristics. Yet even in mice bred to be most susceptible to cancer some additional factor, such as trauma or chronic irritation, is usually necessary before a tumor will develop. Again Miss Jones has shown in the Huntington Laboratories that a race of mice 100% immune to the engrafting of a particular tumor can have this immunity broken down in some 15% of cases by the mere addition to the engrafted tumor of a foreign body. These facts encourage us to think that the cause of cancer may be not one but many different things,

Read at a Meeting of the Rochester Medical Association
Rochester, N. Y. April 4, 1928.
*For record and address of author see "This Week's Issue"
page 524.

Secretary, and present their medical diploma at least one week before the examination

ARTHUR H. CROSBIE, M.D., *Secretary*
520 Commonwealth Ave., Boston

SOCIETY MEETINGS

April 12—Massachusetts General Hospital Staff meeting
Complete notice appears on page 424

April 13—Boston Medical History Club See page 425
for complete notice

April 13—Meeting of the New England Pediatric Society
Detailed notice appears on page 376 issue of April 5

April 14—Blizzard Class Reunion. Complete notice ap-
pears on page 375 issue of April 5

April 14—Boston City Hospital Staff Clinical Meeting
Detailed notice appears on page 425

April 17—South End Neighborhood Club Detailed notice
appears on page 425

April 18—New England Association for Physical Thera-
peutics See page 425

April 20—Massachusetts Psychiatric Society For de-
tailed notice see page 376 issue of April 5

April 24—Lawrence Cancer Clinic See page 376 issue
of April 5 for complete notice

April 24—Boston Medical History Club For complete
notice see page 425

June 18-20—Meeting of the American Association for
the Study of Goltz See page 425 for complete notice

June 18-22—Convention of the Catholic Hospital Asso-
ciation Complete notice appears on page 1697 issue of
February 16

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

May 2, 1923 (Wednesday)—Annual meeting at Haverhill
12:30 P. M. at the Haverhill Country Club Brickst Hill
Glee Street Haverhill

May 3, 1923 (Thursday)—Censors meet for examination
of candidates at Hotel Bartlett, 95 Main Street Haverhill,
at 2 P. M. Candidates should apply to the Secretary
J. Forrest Burnham, M.D. 567 Haverhill Street, Law-
rence at least one week prior

Essex South District Medical Society

May 3 (Thursday)—Censors meet at Salem Hospital for
the examination of candidates at 3:30 P. M. Candidates
should apply to the Secretary Dr. R. E. Stone Beverly
at least one week prior

May 8 (Tuesday)—Annual meeting Detailed notice
appears on page 1437 issue of January 26

Norfolk District Medical Society

May 3—Censors meeting Roxbury Masonic Temple
4 P. M. Applications will be mailed by the Secretary upon
request Detailed notice appears on page 271 issue of
March 22

May 8—Annual meeting Details to be announced

Suffolk District Medical Society

Combined meeting of the Suffolk District Medical
Society and the Boston Medical Library will be
held at the Boston Medical Library 8 The Fen-
way at 8:15 P. M. as follows

April 25—Annual meeting Election of officers

Subject of the evening Problems of Obesity Pro-
fessor Julius Bauer University of Vienna Austria

Discussion to be opened by Drs. George C. Smith
Francis H. McCrudden and James P. O'Hare

Dr. Bauer is Professor of Medicine in the Uni-
versity of Vienna. Since the beginning of his
career at the University of Innsbruck he has con-
tinued studies on the relation between constitution
and disease. His outstanding achievement is rais-
ing the interest of physicians to appreciate the
significance of constitution in disease. In this line
of work he is unquestionably the most prominent
man on the continent.

Light refreshments after the meeting

The medical profession is cordially invited to attend
this meeting

May 3—Censors Meeting See page 425 for complete
notice

Notices of meetings must reach the JOURNAL office on the
Friday preceding the date of issue in which they are to appear

A HOME FOR THE MASSACHUSETTS MEDICAL SOCIETY

UNDER the inspiration of Dr. Buime, the Presi-
dent of the Society, a Committee is at work
which hopes to provide adequate headquarters
for the varied activities of the Society. The
Council at its last meeting approved the plan
and authorized the formation of this Committee.

The growth of the JOURNAL alone demands
quarters more adequate than those at present
available. But of recent years the other func-
tions of the Society have without attracting par-
ticular notice increased many fold. If the So-
ciety is to fulfill its duty to the Commonwealth it
must still further increase its activities. If it
is to carry out its obligations to its members it
must serve in many ways now inadequately un-
dertaken. If it is to ally itself with other or-
ganizations working for similar objects a com-
mon meeting ground is essential for community
of interest.

Of these allied organizations the Boston Medi-
cal Library first comes to mind. It is reaching
out and endeavoring to broaden its work in order
to be of more service to every physician in the
State and in New England. The Society and
the Library are both endeavoring to extend their
activities. They are cooperating. A great
medical centre which shall include the Library,
the Society, and all coordinating organizations
attempting to aid the medical and health inter-
ests of New England is the dream of those who
as a step toward that end look now to the fellows
of the Massachusetts Medical Society for funds
to provide a home for themselves and the activi-
ties of their representatives.

The time is at hand when the medical interests
of New England may properly combine in build-
ing a strong united organization if this section
of the country is to maintain the traditions of
the past.

The first effective step may be taken in this
plan of the President of the Massachusetts Medi-
cal Society to create a home in which the work of
the Society may be carried on effectively and
with efficient organization may be in a position
to aid in other plans.

It must be clearly understood that progress
can be made only when we are ready to meet the
demands. This means contribution of the time
and material resources of every member of the
Society according to his means.

BOOK REVIEW

Pendulum Baby's Health Day by Day—published by
the Professional Press Inc. 17 N. Wabash Avenue,
Chicago

This book is simply a day by day and week by
week outline of the infant's progress—a record book
of the individual infant to be used in the home. A
brief appendix devotes a few pages to infant hygiene,
first aid and food preparation. It is difficult to im-
agine the average busy mother taking the time to
keep this detailed daily log of her infant's feedings,
hour of sleep and recreation, hygiene, etc.

The New England Journal of Medicine

VOLUME 198

APRIL 26, 1928

NUMBER 10

ORIGINAL ARTICLES *Page no. 427-476*

CANCER*

concluding

BY ROBERT B. GREENOUGH, M.D., F.A.C.S.T.

THE medical profession as a whole is inclined to feel a high degree of pessimism in regard to cancer. The practising physician is fully aware of the lack of success which has attended all of the attempts to demonstrate a specific bacterial or other cause for the disease. He views its gradual but steady increase in the mortality statistics with a helpless and hopeless feeling, and he judges from the reports of the most progressive clinics, that the end-results of present day methods of treatment are very, very disappointing. That these conditions do exist, and that they warrant some degree of pessimism cannot be denied, but this is far from being the whole story. More has been learned about cancer in the past twenty five years than in any other period of medical history, great advances have been made in its treatment, both by radical surgery, and by the newer agencies of radiation and electro coagulation, and more effective methods of employing these agents are being developed every day. What is more, the attitude of mind, both that of the medical profession and that of the public has changed. No longer is cancer a word to be shunned and evaded. Cancer is recognized as a disease to be discussed, diagnosed and given treatment like any other disease, and indeed in many instances with far greater prospect of relief than many of the other diseases of advancing years. It is probable that no small part of the increasing death rate from cancer is due to the fact that so many deaths from the other more readily controlled diseases have been eliminated, and thus a greater number of persons attain the age when cancer occurs than ever did before. Life Insurance statistics indicate that an average of eight years has been added to human life in the last twenty-five years, and this has raised the expectation of life from forty-nine to fifty seven, just the period in which cancer is most likely to attain its greatest harvest.

Innumerable attempts have been made to determine a bacterial or protozoan organism as a cause for cancer, but up to the present time none

has been found which could be accepted by the scientific world as capable of producing the disease. The most recent development along this line is the ingenious hypothesis advanced by Dr. W. E. Gave, of London, which is based upon the idea that an ultra-microscopic organism combined with a specific chemical factor is involved in the production of the peculiar tumor of fowls, known as the Rous sarcoma. This tumor, unlike cancer as it is seen in other situations, can be transmitted by material passed through a Berkefeld filter and apparently without the direct transfer from one animal to another of whole tumor cells. Dr. Gave's experiments have roused the greatest interest throughout the scientific world and many attempts have been made to repeat his work, but as yet without complete and positive confirmation. It is very probable that from this work further light may be shed upon the problem of malignant disease but it must be remembered that the Rous tumor is one which is notably different from human tumors, and the direct application of this theory to the human cancer problem is at present quite unjustified.

In spite of the fact that no specific cause for cancer has been as yet established, many interesting and important facts, have been discovered in regard to the disease in the past few years. By means of experimental work with animals, including spontaneous and inoculated tumors, facts in regard to heredity and to immunity have been established that throw light upon the cancer process. It appears from Maud Slye's experiments that the soil in which the tumor grows or from which it springs, may be influenced enormously by inherited characteristics. Yet even in mice bred to be most susceptible to cancer some additional factor, such as trauma or chronic irritation, is usually necessary before a tumor will develop. Again Miss Jones has shown in the Huntington Laboratories that a race of mice 100% immune to the engrafting of a particular tumor can have this immunity broken down in some 15% of cases by the mere addition to the engrafted tumor of a foreign body. These facts encourage us to think that the cause of cancer may be not one but many different things,

Secretary, and present their medical diploma at least one week before the examination

ARTHUR H. CROSBIE, M.D., *Secretary*
520 Commonwealth Ave. Boston

SOCIETY MEETINGS

April 12—Massachusetts General Hospital Staff meeting. Complete notice appears on page 424

April 13—Boston Medical History Club. See page 426 for complete notice

April 13—Meeting of the New England Pediatric Society. Detailed notice appears on page 376 issue of April 5

April 14—Blizzard Class Reunion. Complete notice appears on page 376 issue of April 5

April 14—Boston City Hospital, Staff Clinical Meeting. Detailed notice appears on page 425

April 17—South End Neighborhood Club. Detailed notice appears on page 425

April 18—New England Association for Physical Therapeutics. See page 425

April 20—Massachusetts Psychiatric Society. For detailed notice see page 376 issue of April 5

April 24—Lawrence Cancer Clinic. See page 376 issue of April 5 for complete notice

April 24—Boston Medical History Club. For complete notice see page 425

June 18-20—Meeting of the American Association for the Study of Goiter. See page 425 for complete notice

June 18-22—Convention of the Catholic Hospital Association. Complete notice appears on page 1597 issue of February 16

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

May 2, 1928 (Wednesday)—Annual meeting at Haverhill 12:30 P. M. at the Haverhill Country Club, Brickett Hill, Gile Street, Haverhill

May 3, 1928 (Thursday)—Censors meet for examination of candidates at Hotel Bartlett, 95 Main Street, Haverhill, at 2 P. M. Candidates should apply to the Secretary J. Forrest Burnham, M.D., 567 Haverhill Street. Lawrence at least one week prior

Essex South District Medical Society

May 3 (Thursday)—Censors meet at Salem Hospital for the examination of candidates at 3:30 P. M. Candidates should apply to the Secretary Dr. R. E. Stone, Beverly at least one week prior

May 8 (Tuesday)—Annual meeting. Detailed notice appears on page 1437 issue of January 26

Norfolk District Medical Society

May 3—Censors meeting. Roxbury Masonic Temple 4 P. M. Applications will be mailed by the Secretary upon request. Detailed notice appears on page 271 issue of March 22

May 8—Annual meeting. Details to be announced

Suffolk District Medical Society

Combined meeting of the Suffolk District Medical Society and the Boston Medical Library will be held at the Boston Medical Library, 8 The Fenway at 8:15 P. M. as follows

April 25—Annual meeting. Election of officers

Subject of the evening: Problems of Obesity. Professor Julius Bauer, University of Vienna, Austria

Discussion to be opened by Drs. George C. Smith, Francis H. McCrudden and James P. O'Hare

Dr. Bauer is Professor of Medicine in the University of Vienna. Since the beginning of his career at the University of Innsbruck he has continued studies on the relation between constitution and disease. His outstanding achievement is raising the interest of physicians to appreciate the significance of constitution in disease. In this line of work he is unquestionably the most prominent man on the continent

Light refreshments after the meeting

The medical profession is cordially invited to attend this meeting

May 3—Censors Meeting. See page 425 for complete notice

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear

A HOME FOR THE MASSACHUSETTS MEDICAL SOCIETY

UNDER the inspiration of Dr. Birnie, the President of the Society, a Committee is at work which hopes to provide adequate headquarters for the varied activities of the Society. The Council at its last meeting approved the plan and authorized the formation of this Committee.

The growth of the JOURNAL alone demands quarters more adequate than those at present available. But of recent years the other functions of the Society have without attracting particular notice increased many fold. If the Society is to fulfill its duty to the Commonwealth it must still further increase its activities. If it is to carry out its obligations to its members it must serve in many ways now inadequately undertaken. If it is to ally itself with other organizations working for similar objects a common meeting ground is essential for community of interest.

Of these allied organizations the Boston Medical Library first comes to mind. It is reaching out and endeavoring to broaden its work in order to be of more service to every physician in the State and in New England. The Society and the Library are both endeavoring to extend their activities. They are cooperating. A great medical center which shall include the Library, the Society, and all coordinating organizations attempting to aid the medical and health interests of New England is the dream of those who as a step toward that end look now to the fellows of the Massachusetts Medical Society for funds to provide a home for themselves and the activities of their representatives.

The time is at hand when the medical interests of New England may properly combine in building a strong united organization if this section of the country is to maintain the traditions of the past.

The first effective step may be taken in this plan of the President of the Massachusetts Medical Society to create a home in which the work of the Society may be carried on effectively and with efficient organization may be in a position to aid in other plans.

It must be clearly understood that progress can be made only when we are ready to meet the demands. This means contribution of the time and material resources of every member of the Society according to his means.

BOOK REVIEW

Pendulum Baby's Health Day by Day—published by the Professional Press Inc., 17 N. Wabash Avenue, Chicago

This book is simply a day by day and week by week outline of the infant's progress—a record book of the individual infant to be used in the home. A brief appendix devotes a few pages to infant hygiene, first aid and food preparation. It is difficult to imagine the average busy mother taking the time to keep this detailed daily log of her infant's feedings, hour of sleep and recreation hygiene, etc.

change in the cell metabolism of a magnitude commensurate with its increased power of growth. Whether this is a primary or a secondary change is not determined, but it is not unreasonable to think that the change in the cell metabolism contributes materially to the excessive power of growth of the cancer cell. Burrows believes that the vitamins play an important part in this extraordinary power of growth and here again we do not know whether some special vitamin balance is a prerequisite to cancer growth or whether the changed metabolism of the cancer cell consumes or employs vitamins in a manner impossible for normal cells. It is a well established fact, however, that deprivation of fat-soluble vitamin A produces the disease of Xerophthalmia in rats in which a degree of epithelial proliferation with abnormal keratinization occurs of such extent as to equal that observed in many of the so called pre-cancerous proliferations. Xerophthalmia, however, is a relatively acute process and usually causes the death of the animal unless the diet is corrected. I have never heard of its going on to the actual production of cancer.

Such is a brief sketch of the situation today as regards the nature and cause of cancer, and upon these facts we must construct our policy as regards its treatment. Failing a specific cause we can expect neither a specific diagnostic test nor a specific curative serum. As a matter of prevention, undoubtedly removal of the cause during the stage of pre-cancerous proliferation may be expected to prevent the disease. This can be done for instance with experimental tar cancer if the tar irritation is stopped during the stage of papillomatous dermatitis. Once cancer has occurred, however, it goes on of its own momentum whether the irritant continues or not. Prevention can also be accomplished in human beings by the correction of conditions which by experience we know are forerunners of cancer in its many situations. I refer to the diseases such as leukoplakia and kraurosis, X ray Dermatitis, lacerations of the uterine cervix, ill-fitting tooth plates, and many of the benign tumors and diseases which are recognized as of possible pre-cancerous significance.

For the treatment of established cancer, however, we are forced back on the rather crude methods which have been developed during the past 50 years for the total destruction or removal of the disease. These methods are surgery (including cauterization) and radiation. By these methods cancer can be cured, but the percentage of all cases of cancer that are cured today is a lamentably small one. At a hospital like the Massachusetts General our figures show only about 15% of all cases of cancer of the breast free of disease at the end of the five year following-up period, and only about 10% of all cases of cancer of the uterine cervix. The explanation for these poor results, however, is not

far to seek. Less than 50% of the cases of cancer of all kinds that enter the wards of the Massachusetts General Hospital arrive there sufficiently early in the course of their disease to permit even an attempt at radical operation. Many are too advanced for any operation, others permit only some palliative measures while those upon whom an attempt at radical cure is made include far too many cases of the "forlorn hope" type in which the surgeon's better judgment gives way to his compassion, and he attempts the impossible in the vain hope that conditions may be not so bad as the symptoms indicate.

In spite of this gloomy picture, however, surgery and radiation are capable of curing the disease when they can be applied in early and favorable cases. The same facts are true of most remedial measures. The advanced and moribund case of diphtheria is not cured by anti-toxin, nor is the wide spread general septic-peritonitis often cured by surgery. The main difference is that the advanced case of diphtheria or of peritonitis is obviously seriously sick while the advanced cancer case may show but little external evidence of the wide extent of the disease.

In the early and favorable cases of breast cancer at the Massachusetts General Hospital, those cases in which the disease is still local in the breast and has not as yet involved the axillary lymph nodes, we obtain about 70% of cases well at the end of five years, and in the same way with cancer of the cervix if we take only the cases in which the disease has not extended beyond its point of origin. 50% are cured.

The percentage of possibility of cure varies of course with the situation of the organ involved for it depends to a great extent upon the anatomical situation of the tumor, its accessibility and the importance to life of the organs and tissues which lie adjacent to it, and thus permit or prevent the wide removal with a safe margin of surrounding tissue which is the essential feature of radical surgical treatment. Undoubtedly in the present stage of surgical science the successful operative treatment of cancer of the oesophagus and of the pancreas is thus limited nearly to the vanishing point, although cancer of the stomach and intestine is treated by operation successfully in early and favorable cases. In any case, however, the "spread" between the actual cures (15% in cancer of the breast) and the possible cures (70%) which can be accomplished even with our present resources is far too great. To put it in another way, five times as many cases of cancer as are now cured by surgery and radiation can be cured, if only the treatment can be applied in time. Dr Janet Lane Clayton, an English student of this subject has well said "It must not be forgotten that every advanced case of cancer was once an early case." It is these facts that justify the attempts that are now being so widely made to

and that the disease represents a peculiar method of reaction of those body tissues to external influences which are by inheritance or for any other cause most prone to undergo this change.

In this connection we must remember that cancer can be produced artificially in animals and indeed unintentionally in man by agents of three entirely different characters, chemical, physical and organic. As a chemical agent coal tar is the best example. After long exposure to the irritation of coal tar productive changes in the epithelium occur, which in time progress to cancer. In man this process requires from ten to twenty years, in animals a much shorter period, but one corresponding in proportion to the life span of the individual. As a physical agent X-ray is well recognized to be able to produce cancer, and in man again the time duration is one of years. It is to these changes that we owe the death of practically all of the early practitioners of radiology, and again the pathological manifestations are progressive, beginning with non-malignant proliferations such as keratoses and papillomas, and culminating in metastasizing cancer only after the lapse of many years.

Examples of the origin of cancer from an organic irritant are less frequent, but the disease occurs in man in the bladder as a result of infestation with the worm, *Bilharzia*, and in animals from infection with a worm found in cockroaches (Febiger) or with the cat tape-worm (Wood). Again in this instance a considerable period of irritation and inflammation precedes the actual development of the malignant tumor.

The one common factor in these three different forms of artificially produced cancer appears to be that of long continued but not lethal damage to the tissue cells exposed to the irritant agent. Next to reproduction of the species, the ability to repair damaged tissues is probably one of the most important, widespread and powerful functions in biology. Were this not the case few plants or animals would survive to maturity to carry on their race. It is this function which appears to be involved in all of the so called "pre cancerous" proliferations such as are observed in artificially produced cancer, and it is only after a long continuance of activity of this normal and conservative process that the arbitrary border line of cancer is passed, and the process becomes malignant. This is a reasonable view of the operation of chronic irritation in the production of cancer, and additional facts to support this idea have been developed in the past few years.

Many years ago von Hansemann coined the terms of "anaplasia" and "anaplastic" to indicate the manner in which cancer cells differed in their growth from normal tissue. By anaplasia was meant an enhanced rapidity of growth combined with a loss of functional differentiation. More recently Broders, of the Mayo Clinic has attempted successfully to classify tumors

of different sorts, from their histological appearances, to estimate the degree of loss of functional differentiation, and to check the results with the known end results of treatment. This was first done with squamous cell carcinoma of the external skin and lip, but has now been extended to include the tongue and cervix, and it has even been applied also to carcinoma of glandular origin, such as cancer of the breast and of the rectum. In a series of cases of breast cancer, which I studied myself, the specimens were classified without knowledge of the end results. Three degrees of malignancy were recognized, high, low and medium. The data were then assembled and it was found that in the low malignancy class 68% were alive and well at the end of three years. The medium class gave 33% alive and well, but those of high malignancy (as judged from the histology alone and with no consideration of other factors such as the extent of the disease) showed not a single case alive and well at the end of the three year follow up. These observations have been confirmed by others, and we may feel that facts of great importance in prognosis can be gathered from such a study of the slides of the original tumor.

The significance of these facts in connection with the production of artificial cancer, however, is the matter that concerns us here. It was shown that the pre-cancerous proliferation produced by tar resulted in an over growth of the damaged cells, with the production of keratoses and papillomas, in other words, disturbed or abnormal function. We now see that this same change continues all along the line, beyond the border line of cancer and even up to those forms of cancer, which we regard as most malignant. The arbitrary criterion which we employ to separate cancer from non-malignant disease is the presence of cells infiltrating the deeper tissues in situations where such cells cannot normally occur. It is quite possible that the real dividing line between cancer and non cancerous diseases lies somewhere else than at the point we arbitrarily attempt to place it. Every pathologist knows that there are a certain number of tumors on the border-line between cancer and non cancerous processes, in which a positive decision from the microscopic specimen is an impossibility. This perhaps is one of the best arguments against a specific parasite as a cause for cancer, and undoubtedly favors the view that it is instead a biological process, a peculiar form of growth of the previously normal body cells.

Other of the new facts which have been established in regard to cancer are in accordance with this idea. Thus the important observations of Warburg, that cancer cells have the ability to convert glucose into lactic acid in the presence of oxygen to an extent some twenty times greater than normal cells, indicates a physiological

change in the cell metabolism of a magnitude commensurate with its increased power of growth. Whether this is a primary or a secondary change is not determined but it is not unreasonable to think that the change in the cell metabolism contributes materially to the excessive power of growth of the cancer cell. Burrows believes that the vitamins play an important part in this extraordinary power of growth, and here again we do not know whether some special vitamin balance is a prerequisite to cancer growth or whether the changed metabolism of the cancer cell consumes or employs vitamins in a manner impossible for normal cells. It is a well established fact, however, that deprivation of fat-soluble vitamin A produces the disease of Xerophthalmia in rats in which a degree of epithelial proliferation with abnormal keratinization occurs of such extent as to equal that observed in many of the so called pre-cancerous proliferations. Xerophthalmia, however, is a relatively acute process and usually causes the death of the animal unless the diet is corrected; I have never heard of its going on to the actual production of cancer.

Such is a brief sketch of the situation today as regards the nature and cause of cancer and upon these facts we must construct our policy as regards its treatment. Failing a specific cause we can expect neither a specific diagnostic test nor a specific curative serum. As a matter of prevention, undoubtedly, removal of the cause during the stage of pre-cancerous proliferation may be expected to prevent the disease. This can be done for instance with experimental tail cancer, if the tail irritation is stopped during the stage of papillomatous dermatitis. Once cancer has occurred, however, it goes on of its own momentum whether the irritant continues or not. Prevention can also be accomplished in human beings by the correction of conditions which by experience we know are forerunners of cancer in its many situations. I refer to the diseases such as leukoplakia and kraurosis, X-ray Dermatitis, lacerations of the uterine cervix, ill-fitting tooth plates, and many of the benign tumors and diseases which are recognized as of possible pre-cancerous significance.

For the treatment of established cancer, however, we are forced back on the rather crude methods which have been developed during the past 50 years for the total destruction or removal of the disease. These methods are surgery (including cauterization) and radiation. By these methods cancer can be cured, but the percentage of all cases of cancer that are cured today is a lamentably small one. At a hospital like the Massachusetts General our figures show only about 15% of all cases of cancer of the breast free of disease at the end of the five year following-up period, and only about 10% of all cases of cancer of the uterine cervix. The explanation for these poor results, however, is not

far to seek. Less than 50% of the cases of cancer of all kinds that enter the wards of the Massachusetts General Hospital arrive there sufficiently early in the course of their disease to permit even an attempt at radical operation. Many are too advanced for any operation, others permit only some palliative measures, while those upon whom an attempt at radical cure is made include far too many cases of the "forlorn hope" type in which the surgeon's better judgment gives way to his compassion, and he attempts the impossible in the vain hope that conditions may be not so bad as the symptoms indicate.

In spite of this gloomy picture, however, surgery and radiation are capable of curing the disease when they can be applied in early and favorable cases. The same facts are true of most remedial measures. The advanced and moribund case of diphtheria is not cured by anti-toxin, nor is the wide spread general septic-peritonitis often cured by surgery. The main difference is that the advanced case of diphtheria or of peritonitis is obviously seriously sick while the advanced cancer case may show but little external evidence of the wide extent of the disease.

In the early and favorable cases of breast cancer at the Massachusetts General Hospital, those cases in which the disease is still local in the breast and has not as yet involved the axillary lymph nodes, we obtain about 70% of cases well at the end of five years, and in the same way with cancer of the cervix, if we take only the cases in which the disease has not extended beyond its point of origin 50% are cured.

The percentage of possibility of cure varies of course with the situation of the organ involved for it depends to a great extent upon the anatomical situation of the tumor, its accessibility and the importance to life of the organs and tissues which lie adjacent to it, and thus permit or prevent the wide removal with a safe margin of surrounding tissue which is the essential feature of radical surgical treatment. Undoubtedly in the present stage of surgical science the successful operative treatment of cancer of the oesophagus and of the pancreas is thus limited nearly to the vanishing point, although cancer of the stomach and intestine is treated by operation successfully in early and favorable cases. In any case, however, the "spread" between the actual cures (15% in cancer of the breast) and the possible cures (70%) which can be accomplished even with our present resources is far too great. To put it in another way, five times as many cases of cancer as are now cured by surgery and radiation can be cured if only the treatment can be applied in time. Dr Janet Lane Claypon, an English student of this subject, has well said "It must not be forgotten that every advanced case of cancer was once an early case." It is these facts that justify the attempts that are now being so widely made to

educate the public, and the medical profession as well, to a better appreciation of the importance of delay in the treatment of cancer. Both are undoubtedly at fault, and both are all too ready to temporize. In a series of cases of cancer of the breast at the Massachusetts General Hospital, we found an average delay, from the time the patient noticed her first symptoms until the operation, of $7\frac{1}{2}$ months. The average delay on the part of the patient before seeking medical advice was 6 months. The time consumed by the physician in making a diagnosis was 2 weeks, and the remainder of the time was consumed in getting the patient in to the hospital and in the necessary preparations for the operation. On the other hand, in a series of cases of cancer of the cervix studied by Leland at the Huntington Hospital (not yet published) he was able to show a falling off of prospective cure, of 16% for each month of delay in obtaining treatment. Cancer is not commonly regarded as an acute disease, and indeed takes years in many cases to run its course, but a disease which advances so rapidly in the early stages as to diminish the patient's chance of cure 4% a week, is indeed acute, and a delay of $7\frac{1}{2}$ months must be admitted to be evidence of neglect or disregard of the established facts by the patient or by his physician or, too frequently, by both.

So far as the public is concerned, much has already been accomplished by such agencies as the American Society for the Control of Cancer, our National, State and Municipal Public Health Departments, the magazines and especially the daily press. The public has been educated to a better understanding of the cancer problem, many of the erroneous ideas about the disease have been corrected and the laity has been taught to appreciate that the first steps in the treatment of cancer must be taken by the patient himself, by promptly consulting his medical advisor for symptoms which are in any way suggestive of the possibility of cancer, such as the presence of a lump or an ulceration which is slow to heal, or the abnormal discharge of blood from any of the body cavities. Much undoubtedly remains to be done in this direction. The periodic health examination, for instance, promises to aid in the early discovery of many cases of cancer, but the situation in any case is far more satisfactory than it was 10 years ago.

The education of the medical profession, however, is another story and indeed the difficulties encountered by the general practitioner deserve our greatest sympathy. The advanced and inoperable case of cancer presents textbook symptoms which are unmistakable, but the early case may well defy the diagnostic abilities of the most experienced and require an exploratory operation conducted with all of the precautions necessary to protect the patient's possibility of cure. The remedy would seem to be to emphasize to

the medical profession as to the public, the possible "cancer significance" of such symptoms as have been detailed above, and at the same time, to provide in one way or another adequate accessible expert consultation service, free or not as the case may require, which may be called upon in the doubtful case.

In addition to the institutions devoted entirely to cancer in the larger medical centers, cancer clinics and tumor clinics are being organized in many of our larger general hospitals, precisely to meet this situation. The truth is that cancer is no longer a one man job. The adequate diagnosis and treatment of cancer requires today a whole group of men working in cooperation and supplied with all of the material equipment of a general hospital including radium and X-ray. The internist, the pathologist, the chemist and the physicist are just as necessary in this group as are the radiologist, the surgeon and the representatives of the specialties, such as genito urinary surgery and nose and throat. Only by some such organization can we hope to make available the best of modern treatment to the patient in the early stages of the disease.

An attempt to supply service of this nature has been made in Massachusetts under the Department of Public Health. We have a state cancer hospital of about 90 beds equipped with adequate personnel and facilities for the treatment of cancer in all stages of the disease. In close co-operation with this central institution, we have organized in established general hospitals in a dozen different cities throughout the state, special cancer clinics for the diagnosis and treatment of early cases. This is a comparatively new field of activity for a public health department, but the results of the first eight months experience indicate that a real want is being supplied.

When it comes to the treatment of early cases whether by surgery or by radiation, it is to be feared that every patient does not today receive the best that medicine can afford. Radical operations for the cure of cancer in its various situations have been developed in the course of years, so that they are virtually standardized. Such operations are based first upon the anatomical relations of the part involved, and secondly upon the natural history of the disease as it occurs in that particular situation, especially with reference to its lines of extension beyond the primary growth. There is, however, a wide difference between the standard radical operation as practiced in the better clinics, and the operations that are commonly performed by surgeons throughout the country even in the early and favorable cases. 33% of the cases of cancer of the breast which come to the Huntington Hospital with recurrence after operation are found on examination to have been subjected to a primary operation in an attempt at cure which falls short of the recognized radical operation for can-

cer of the breast. It is astonishing, it seems to me, that such can be the fact for especially in cases of cancer of the breast the standard operation involving the removal of the breast with all the skin over it, the pectoral muscles, the entire axillary contents and the deep fascia of the chest wall from clavicle to epigastrium and from sternum to Latissimus, is or should be a matter of common surgical knowledge. It is difficult to comprehend the mental attitude of a surgeon who performs any operation short of the standard operation in an early and favorable case of cancer of the breast, and thus deprives his patient of the opportunity for cure to which she is entitled by reason of the advances that have been made in surgical treatment.

With regard to radiation also it must be admitted that there is room for improvement both in the technique of the application of radium and X-ray, and to a far greater extent in the judgment employed in the selection of cases suitable for treatment by these agents. Time and space will not permit a detailed discussion of these points but to anyone who deals with cancer cases in their later stages it is all too frequently made evident that the treatment obtained by the cancer patient during the early and

favorable stages of the disease falls short of the best that could be given even at the present time.

The value of the colloidal metals, copper, gold and especially and more recently, lead in the treatment of cancer is still under discussion. Conflicting reports are obtained from many sources, and at the present moment one can only say that the value of these methods is open to considerable doubt and their use is attended by dangers which can not at present be entirely avoided.

To summarize the burden of this communication, it may be said:

The deaths from cancer are increasing year by year. No specific cause or remedy for the disease has yet been discovered. With our present methods of treatment, surgery and radiation cures can be obtained in early and favorable cases. If all cases could be given treatment in the early and favorable stage of the disease some five times as many cures of cancer could be obtained as are obtained today. To obtain this end the public and the medical profession must be taught that in its early stages cancer is essentially an acute disease, but one which is in many cases amenable to cure by prompt, radical and efficient treatment by surgery or by radiation.

CANCER STUDIES IN MASSACHUSETTS 2 HABITS, CHARACTERISTICS AND ENVIRONMENT OF INDIVIDUALS WITH AND WITHOUT CANCER

BY HERBERT L. LOMBARD, M.D., AND CARL R. DOERING, M.D.*†

At the inception of the Massachusetts program for cancer control Dr. Frederick Hoffman was consulted for suggestions. He advised that the Massachusetts study should include a collection of questionnaires similar to those that he was collecting in his San Francisco Survey.¹ As Dr. Hoffman is probably the greatest collector of figures of our time, any advice from him should be most seriously considered. A few of these questionnaires were obtained in the 1925 study² but as the number was too small for tabulation they were given to Dr. Hoffman to incorporate with his other records.

During 1927 a somewhat similar study was made by this Department, with the assistance of several of the visiting nurses' organizations throughout the State. Our method of approach was somewhat different from that of Dr. Hoffman. We feel that any study of the habits of individuals with cancer is of little value without a similar study of individuals without cancer. To know that a large percentage of patients with cancer have certain habits is of little value for inference unless we know what percentage of the community at large has the same habits.

In the laboratory it may be fairly easy to

obtain animals which may be used as controls but in dealing with the human species this is an entirely different problem.

METHODS—Our controls were obtained by having the same investigator who collected the record of the patients with cancer fill out a similar record for an individual without cancer, of the same sex and approximately the same age. In a few cases it was necessary for a different investigator to obtain a control.

The following information was obtained:

Name	Address		
Sex	Age	Race	Conjugal state
Birthplace of individual	Of father	Of mother	
No. of children	Height	Weight	
Average amount of exercise before illness			
Length of intimate association with cancer patients			
Foods eaten prior to illness			
Meat, Sugar, Starches, Canned goods, Green vegetables, Other vegetables, Milk products, Coffee, Tea, Salt			
Use of tobacco			
Use of alcohol			
Use of laxatives			
Housing conditions			
Economic status			
Chronic past illness			
Type of cancer			

These items are intended to cover most of the present hypotheses regarding the causation of cancer.

Massachusetts Department of Public Health and Harvard School of Public Health

For record and address of author see "This Week's Issue" page 574

We obtained records from 217 cancer patients and a similar number of controls. While the number is small, it is felt to be sufficiently large to make a preliminary statement of our findings. Sometimes large differences will show up in small samples, and only such differences are of value in a program of cancer control.

EVALUATION OF SAMPLE—The groups contain 55 males and 162 females. The sex ratio of 34 males to 100 females is less than that found in the cancer mortality records, 65 males to 100 females, and the clinic attendance of 80 males to 100 females. This difference probably means that many men with cancer are cared for by their wives, but when the women are affected the visiting nursing associations are employed. The average age of the cancer patient is 59.2 ± 9 years, and the standard deviation is 12.9. The controls have an average age of 59.5 ± 8 years, and the standard deviation is 12.2. The slight difference in ages is due to the difficulty of getting controls of exactly the same age as the cancer cases, but these differences are insignificant.

The two groups are practically identical regarding the economic status of the individual, although there are fewer cancer cases among the well to do, as shown in Table 1.

TABLE 1
ECONOMIC STATUS

	Poor	Moderate	Well to do	Unknown
Cancer group	35	172	7	3
Control group	45	151	18	3

TABLE 2

	Semitic	Black	Others	Unknown
Cancer group	29	5	177	6
Control group	28	3	186	0

In respect to race, there is little difference between the cancerous and the controls.

When the two groups are compared by country of birth of individuals, the native born are in excess of the foreign born, but the difference is within the limit of chance fluctuation. When we consider the country of birth of the father and mother we find the differences are greater. In a previous paper³ we found that cancer was more prevalent among the foreign born and children of foreign born than among the children of native parents. In selecting the controls it is most difficult to get individuals whose parents are born in the same countries as those of the cancer patients. Our cancer group, therefore, has more individuals with foreign parents than the control group.

In Table 4 a comparison of the two groups relative to the conjugal state shows that there are more single females among the control group than among the cancer group. In order to determine if this difference was due to our sample, the female deaths from cancer in the State were compared by conjugal state with our sample, with the resulting figure of 16.2 per cent for the State and 13.6 per cent for the sample. The cancer group evidently has too few single females, and the control group has too many, as several of the nurses used themselves as controls.

TABLE 4
CONJUGAL STATE

	Cancer group			Control group		
	M	F	T	M	F	T
Single	7	22	29	6	41	47
Married	30	86	116	37	71	108
Widowed	17	50	67	9	47	56
Divorced	1	1	2	2	1	3
Separated	0	3	3	0	2	2
Unknown	0	0	0	1	0	1

In order to determine how representative our sample of cancer cases was in respect to type, comparison has been made on a percentage basis.

TABLE 3
NATIVITY

	Birthplace of Individual		Birthplace of Father		Birthplace of Mother	
	Cancer group	Control group	Cancer group	Control group	Cancer group	Control group
United States	86	103	40	65	37	63
Ireland	42	38	71	57	71	58
Russia Poland	14	14	15	17	14	15
Italy	6	4	6	5	6	5
England Scotland Wales	24	18	24	23	27	25
Germany Austria Holland Belgium	5	3	7	8	6	8
Norway, Denmark Sweden	4	4	6	6	5	5
Greece, Spain Portugal France	0	1	0	2	0	0
Canada (French)	15	6	18	6	20	7
Canada (Others)	16	20	22	21	23	24
Lithuania Finland	0	2	0	2	0	2
All others	5	4	8	5	8	5

with the types found in the Massachusetts Hospitals, in the death returns, and in the State-aided cancer clinics. It is impossible to arrive at a precise figure. The death returns do not include the cures. The hospital admissions do not account for the many patients remaining at home. The volume of the clinic cases is too small on which to base judgment.

Table 5 shows the various distributions

TABLE 5

PERCENTAGE DISTRIBUTION OF CANCER CASES BY TYPE

Type	Nurses' Questionnaires	Cancer admissions to hospitals	State-aided clinics	Deaths
Buccal cavity	13.8	9.6	22.6	5.6
Stomach group	18.9	17.2	2.5	31.4
Intestinal group	14.7	12.9	4.8	18.2
Female genitals	21.6	20.4	13.4	13.9
Skin	2.3	2.6	30.2	2.1
Male genitals	1.4	3.5	1.6	3.4
Breast	20.7	16.3	19.1	10.8
Other organs	5.1	14.6	1.6	12.2
Unspecified	1.4	2.8	4.1	2.4

The above discussion of comparisons of the cancer and control groups emphasizes the difficulties of getting satisfactory controls. We believe, however, they are as good as can be obtained, but as we realize their inadequacy, we have arrived at conclusions only after due consideration of the known differences between the groups.

COMPARISON OF CANCER AND CONTROL GROUPS—The contagion theory was studied by comparing the two groups in respect to the previous association with cancer patients. Table 6 shows that there is no relationship

TABLE 6

ASSOCIATION WITH CANCER PATIENTS

	None or slight	Association	Unknown
Cancer group	146	19	52
Control group	154	29	34

The work of several laboratory investigators shows convincing evidence in favor of the hereditary predisposition to develop cancer. There is also a slight amount of evidence from human material.⁴ We have attempted to measure the difference between the cancer and the control groups regarding heredity in Table 7, but we realize that social as well as genetic differences may be thus depicted. Forty-one per cent of those with negative heredity history of cancer in more distant relative fall in the cancer group, while we should expect fifty per cent. Also it is

noticeable that sixty-one per cent of the "unknowns" fall in the cancer group. Both these differences are highly significant statistically. The difference between the two groups with respect to positive heredity history is not significant. No inference can be made unless we know how the unknowns would be distributed if they were known. We found that there was a considerably larger percentage of foreign born among the unknowns of the cancer group, and assuming that the foreign born person in the cancer age cannot well remember or perhaps never knew the causes of death of his more distant relatives, it is reasonable to expect that some of the unknowns at least would have a positive history. Therefore, we feel that there may have been a relationship shown in the following table if we had all of the information. This applies almost equally well to the heredity history in the immediate family.

TABLE 7

HEREDITY

	Cancer Group		Control Group	
	Cancer in immediate family	Cancer in more distant relatives	Cancer in immediate family	Cancer in more distant relatives
Present	26	23	24	14
Absent	121	96	151	140
Unknown	70	98	42	63

Housing conditions were used to measure the parasitic theory. It is believed that cockroaches and other vermin, possible carriers of parasites, would be more prevalent where the housing conditions were poor, than where they were good. Table 8 shows no connection between cancer and housing.

TABLE 8

HOUSING CONDITIONS

	Good	Bad	Unknown
Cancer group	157	51	9
Control group	158	55	4

Constipation has been considered a possible cause of cancer.⁵ The users of laxatives have been studied to measure any possible connection between constipation and cancer. Table 9 shows no significant difference between the two groups.

TABLE 9

USE OF LAXATIVES

	Users	Non users	Unknown
Cancer group	185	22	10
Control group	180	28	9

We obtained records from 217 cancer patients and a similar number of controls. While the number is small, it is felt to be sufficiently large to make a preliminary statement of our findings. Sometimes large differences will show up in small samples, and only such differences are of value in a program of cancer control.

EVALUATION OF SAMPLE—The groups contain 55 males and 162 females. The sex ratio of 34 males to 100 females is less than that found in the cancer mortality records, 65 males to 100 females, and the clinic attendance of 80 males to 100 females. This difference probably means that many men with cancer are cared for by their wives, but when the women are affected the visiting nursing associations are employed. The average age of the cancer patient is 59.2 ± 9 years, and the standard deviation is 12.9. The controls have an average age of 59.5 ± 8 years, and the standard deviation is 12.2. The slight difference in ages is due to the difficulty of getting controls of exactly the same age as the cancer cases, but these differences are insignificant.

The two groups are practically identical regarding the economic status of the individual, although there are fewer cancer cases among the well to do, as shown in Table 1.

TABLE 1
ECONOMIC STATUS

	Poor	Mod- erate	Well to do	Un- known
Cancer group	35	172	7	3
Control group	45	151	18	3

TABLE 2

	Semitic	Black	Others	Un- known
Cancer group	29	5	177	6
Control group	28	3	186	0

In respect to race, there is little difference between the cancerous and the controls.

When the two groups are compared by country of birth of individuals, the native born are in excess of the foreign born, but the difference is within the limit of chance fluctuation. When we consider the country of birth of the father and mother we find the differences are greater. In a previous paper³ we found that cancer was more prevalent among the foreign born and children of foreign born than among the children of native parents. In selecting the controls it is most difficult to get individuals whose parents are born in the same countries as those of the cancer patients. Our cancer group, therefore, has more individuals with foreign parents than the control group.

In Table 4 a comparison of the two groups relative to the conjugal state shows that there are more single females among the control group than among the cancer group. In order to determine if this difference was due to our sample, the female deaths from cancer in the State were compared by conjugal state with our sample, with the resulting figure of 16.2 per cent for the State and 13.6 per cent for the sample. The cancer group evidently has too few single females, and the control group has too many, as several of the nurses used themselves as controls.

TABLE 4
CONJUGAL STATE

	Cancer group			Control group		
	M	F	T	M	F	T
Single	7	22	29	6	41	47
Married	30	86	116	37	71	108
Widowed	17	50	67	9	47	56
Divorced	1	1	2	2	1	3
Separated	0	3	3	0	2	2
Unknown	0	0	0	1	0	1

In order to determine how representative our sample of cancer cases was in respect to type, comparison has been made on a percentage basis.

TABLE 3
NATIVITY

	Birthplace of Individual		Birthplace of Father		Birthplace of Mother	
	Cancer group	Control group	Cancer group	Control group	Cancer group	Control group
United States	86	103	40	65	37	63
Ireland	42	38	71	57	71	58
Russia Poland	14	14	15	17	14	15
Italy	6	4	6	5	6	5
England Scotland Wales	24	18	24	23	27	25
Germany, Austria Holland Belgium	5	3	7	8	6	8
Norway, Denmark Sweden	4	4	6	6	5	5
Greece Spain Portugal France	0	1	0	2	0	0
Canada (French)	15	6	18	6	20	7
Canada (Others)	16	20	22	21	23	24
Lithuania Finland	0	2	0	2	0	2
All others	5	4	8	5	8	5

males showed no relationship and therefore the bad teeth may be regarded as a source of toxicity affecting total cancer rather than a source of chronic irritation affecting the cancers of the mouth

Various foods have been studied to determine if there was any relationship between their ingestion and cancer. Table 16 shows, with the exception of dry vegetables and tea and coffee, that the cancer cases ate less of the various articles of food than the controls. This probably is accounted for by the presence of the disease itself. In the continuation of this study we are seeking information on the foods eaten prior to illness, as in many cases the diet has changed after the inception of the disease.

TABLE 16

DIET

	Cancer Group			Control Group		
	Heavy	Occasional or never	Unknown	Heavy	Occasional or never	Unknown
Meat	139	48	30	162	42	13
Sugars	111	91	15	142	71	4
Starches	181	25	11	200	14	3
Canned goods	35	161	21	50	153	14
Green vegetables	125	75	17	147	68	2
Other vegetables	44	139	34	42	150	23
Milk products	176	27	14	196	20	1
Coffee Tea	189	14	14	185	28	4

The ingestion of salt has been considered by several as predisposing to cancer.⁸ Table 17 points to no relationship between salt and cancer.

TABLE 17

SALT

	Much	Mod- erate	Little	Un- known
Cancer group	35	127	39	16
Control group	42	110	56	9

The use of alcohol shows no relation with cancer. The unknowns, however, are so many that they might alter the conclusions.

The use of tobacco has long been considered a factor in the incidence of cancer of the buccal cavity. Dr. Hoffman gives the smoking habits of

cancer patients by the site of the disease in his San Francisco Survey. We have realigned Dr. Hoffman's figures in preparing Table 19.

TABLE 19

PERCENT OF EXCESSIVE SMOKERS BY TYPE OF CANCER

	Percent	No of cases
Cancer of the throat	54	13
Cancer of the intestines	100	5
Cancer of the pancreas	33	3
Cancer of the rectum	88	8
Cancer of the lung	100	5
Cancer of the bladder	60	10
Cancer of the lip	92	12
Cancer of the jaw	100	5
Cancer of the neck	83	6
Cancer of the cheek	100	12
Cancer of the oesophagus	77	13
Cancer of the prostate	100	9
Cancer of the tongue	100	7
Cancer of the stomach	82	39
Cancer of the leg	50	2
Sarcoma	73	15
Miscellaneous	60	20

If we postulate that only cancers of certain sites should be affected by heavy smoking, and that those of other sites should not be so affected, and that sarcoma also should not be influenced by tobacco smoking, we can then compare the sites supposed to be affected by smoking with the other two groups which now can be regarded somewhat as controls. These figures, however, give no light upon the relation of smoking to cancer in general. Including under "sites supposed to be affected by smoking" cancers of the lip, jaw, cheek and tongue, and under "sites

TABLE 20

CANCER SITES BY SMOKING

	Sites supposed to be affected by smoking	Sites not supposed to be affected by smoking	Sarcoma	Total
Heavy smokers	34	100	11	145
Not heavy smokers	1	34	4	39
Total	35	134	15	184
Per cent of heavy smokers	97.2	74.6	73.3	78.8

TABLE 18

ALCOHOL

	Temperate Use									Intemperate Use								
	Users			Non users			Unknown			Users			Non users			Unknown		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Cancer group	33	30	63	12	109	121	10	23	33	10	2	12	24	125	149	21	35	56
Control group	35	36	71	16	106	122	4	20	24	6	0	6	35	135	170	14	27	41

The female cancers for all types by the number of children are compared with cancers of the female genitals and cancers of the breast in Table 10. The findings are not statistically significant, probably because of the small figures, but the results are consistent with those of the Health Section of the League of Nations.⁹ They found that cancer of the uterus is more prevalent and cancer of the breast less prevalent among women who have borne children than among those who had not. Seventy-five per cent of our total group have borne children while seventy-seven per cent of those with cancer of the female genitals and seventy-two per cent of those with cancer of the breast had children.

TABLE 10

CANCERS AMONG FEMALES BY THE NUMBER OF CHILDREN

	Total cancers	Female genitals	Breast
No children	40	11	12
One child	20	8	6
Over one child	98	28	25
Unknown	4	0	3

The possible relationship between exercise and cancer is measured in Table 11, and found to be significant.

TABLE 11

EXERCISE BEFORE ILLNESS

	Great	Mod- erate	Little	Un- known
Cancer group	64	120	26	7
Control group	57	118	25	17

Height and weight are both studied and while height shows no significance there was a tendency among the cancer group to be underweight. This difference may be due to the probability that the nurses classified their patients by the present weight rather than the normal weight before illness.

TABLE 12

HEIGHT

	Short	Medium	Tall	Un- known
Cancer group	37	142	38	0
Control group	32	131	51	3

TABLE 13

WEIGHT

	Slim	Me- dium	Very Stout	Un- known
Cancer group	70	96	42	9
Control group	36	118	54	6

Chronic past illnesses were studied to determine if any relationship existed between them

and cancer. The only significant difference between the cancer cases and the controls appears in the chronic diseases of the teeth in males. This disease is over three times as prevalent among the cancer group as among the control group and is statistically significant, as forty per cent of the male patients with cancer had bad teeth and only eleven per cent of the controls. Among the females thirteen per cent of the cancerous patients and twenty per cent of the controls had bad teeth. A check was made of this sample by getting similar figures from the clinic cases.¹² The cancer group was here compared with a control group so selected from those attending the clinics with no evidence of cancer as to make the two groups similar in respect to age and sex. We found 9.2 per cent of the males with cancer, 3.6 per cent of the male controls, 4.6 per cent of the females with cancer and 1.7 per cent of the female controls had bad teeth. The figures for males are consistent with those given in Table 14 but are only on the border line of significance. The females differ from those in Table 14 as they have a

TABLE 14

CHRONIC PAST ILLNESS BY SEX

	Cancer Group		Control Group	
	Male	Female	Male	Female
Stomach	17	60	14	54
Female genitals		30		12
Intestinal trouble	16	62	14	53
Breast		13		12
Nervous trouble	11	64	7	58
Skin	1	5	1	7
Lungs	3	2	3	7
Bladder	2	10	3	5
Heart	2	7	9	15
Teeth	22	21	6	33
None	7	25	12	22
Unknown	7	21	6	17

higher percentage of bad teeth in the cancer group. The difference, however, is insignificant. There are a smaller number of individuals with bad teeth among the clinic cases than in the nurses' study. This difference is believed to be due to the better economic status of the individuals attending the State aided Cancer Clinics. It might be thought that the excess of bad

TABLE 15

MALE CANCERS AND TEETH

	Bad teeth	Not bad teeth	Total
Buccal cavity cancers	7	10	17
All other cancers	15	23	38
Total	22	33	55
Per cent of buccal cavity cancers	31.8	30.3	30.9

teeth in males might have some relation to the excess of cancer of the buccal cavity in males, but the subdivision of cancer by type among

trols, which are most difficult to obtain. We believe our sample to be as nearly satisfactory as is reasonably possible to get on a large scale.

As only large differences between controls and cancers need be considered the size of the sample is adequate.

The collection of data on cancer patients without similar data on controls is valueless in the determination of factors influencing the causation of cancer.

Bad teeth in males are more common among the cancer group than among the controls. This applies to cancer in general and is not limited to buccal cavity cancer.

Heavy smoking is more common in the cancer group than among the controls. In our sample heavy smoking was largely pipe smoking and was particularly more common in those individuals with cancer of the buccal cavity.

The figures gave a suggestion of a hereditary predisposition to cancer but the volume of unknowns made definite conclusions impossible.

The cancer group ate less than the controls but this probably is wholly due to the presence of the disease.

Although we realize that the figures in this study are too small and incomplete for significant conclusions to be drawn, they are presented to show the methods used in order that others may conduct similar studies. We feel that other independent samples collected in a like manner would do much to either prove or disprove our findings.

We wish to make acknowledgment to Dr. Frederick Hoffman for the suggestion which instigated this

study to Dr. John A. Nichols for his courtesy in allowing us to interview his patients at Tewksbury to Miss Mary P. Cronin for collecting material at Tewksbury and editing all the questionnaires to the following visiting nursing organizations for giving so freely of their time in collecting the data: Instructive Nursing Association, New Bedford; Lowell Visiting Nurse Association; Worcester Visiting Nurse Association; Brockton Visiting Nurse Association; Community Nursing Association, Boston; Hingham Visiting Nurse Association; District Nursing Association of Fall River; Newton Visiting Nurse Association; Fitchburg Visiting Nurse Association; and the Lynn Visiting Nurse Association.

REFERENCES

1. Hoffman, Frederick. On the Causation of Cancer—Delivered before the American Association for Cancer Research, Buffalo, N. Y., April 7, 1924.
2. Special Report of the Departments of Public Health and Public Welfare Relative to the Prevalence of the Disease of Cancer Throughout the Commonwealth and Particularly of the Disease in its Inoperable Stage or Form—House Document No. 1200, 1927.
3. Lombard and Doering. Cancer Studies in Massachusetts. 1. The Relationship Between Cancer and Density of Population in Massachusetts. Proceedings of the National Academy of Science, Vol. 13, No. 10, Oct. 1927.
4. Greenwood. A Review of Recent Statistical Studies of Cancer Problems. The Cancer Review, Vol. III, No. 3, March 1928.
5. Lane. Cancer and Intestinal Stasis. Practitioner, April 1924.
6. Report of the Work of the Cancer Commission for the Years 1923 to 1927. League of Nations, C. H. 631 (1), C. H. Cancer, 4th (2).
7. Marwood. What Is the Root Cause of Cancer. John Bale Sons & Danielsson Ltd., London.
8. Hoffman. Cancer and Overnutrition. Prudential Press, 1927.
9. Hoffman. Third and Fourth Quarterly Report of the San Francisco Cancer Survey. Prudential Press, 1925.
10. Hoffman. Seventh and Eighth Quarterly Report of the San Francisco Survey. Prudential Press, 1927.
11. Dublin, Fiske and Kopf. Physical Defects as Revealed by Periodic Health Examinations. American Journal of the Medical Sciences, Vol. CLXX, No. 4, October 1925.
12. Bigelow and Lombard. Experience With the Program of Cancer Control in Massachusetts. American Journal of Public Health and the Nation's Health, Vol. X, No. 4, April 1925.

THE EARLY DIAGNOSIS OF CARCINOMA OF THE RECTUM

BY DANIEL FISKE JONES, M.D., F.A.C.S.*

THE diagnosis of carcinoma of the rectum is dependent upon an opportunity to see the patient, that is, there should never be an error in diagnosis after the physician has had an opportunity to examine the patient. Training of the laity to seek advice on the slightest suggestion of any change in bowel habit or sensation or bleeding from the rectum is of the greatest importance. Training of the physician to make a digital and proctoscopic examination of the rectum is of equal importance. The training of one group and not the other would accomplish nothing. It is a fact that the only early symptoms are a change in bowel habit or sensation and bleeding.

An early growth before it effects obstruction should cause slight irritation and should cause slightly increased peristalsis or a sensation of some material still left in the rectum. Carcinoma of the bowel ulcerates early and therefore bleeding should be an early symptom. The usual

text-book symptoms, which are late symptoms, are

- (1) *Constipation*. This symptom cannot be present until the growth blocks the intestine more or less. At the present time when mineral oil and cathartics are used to such an extent the time when this symptom makes an impression is much later than formerly. One must not only inquire about constipation but must ask about the increase in the dose of cathartics and as to whether the patient is taking mineral oil.
- (2) *Constipation and Diarrhoea*. This is a text-book symptom which is rarely spoken of by the patient. Their idea is that they have frequent movements after constipation because they have taken cathartics. They rarely admit that they have a diarrhoea but do admit that they have from three to twenty discharges a day. They distinguish between frequent

not supposed to be affected by smoking'' all other cancers, we show the results in Table 20

Of all males who have cancer in the above sample 78.8 per cent are heavy smokers. Dr Hoffman found in his larger sample of 834 male patients¹⁰ that 44.1 per cent were heavy smokers. In our sample, 47.3 per cent were found to be heavy smokers. What is the true percentage of heavy smokers among males with cancer? Evidently the sample quoted in Tables 18 and 19 is not representative of the cancer population. What is the percentage of heavy smokers in the general population? We do not know. Dublin, Fiske and Kopf¹¹, among 16,662 male policy holders in the Metropolitan Life Insurance Company, found 33.1 per cent. to be heavy smokers. In our control sample we found twenty per cent heavy smokers and in our total group, including both cancers and controls, we found 33.7 per cent.

The difference between our control group and the cancer group in respect to heavy smoking is twenty-seven per cent. This is highly significant which suggests that heavy smoking has some relation to cancer in general. Of the heavy smok-

buccal cavity cancers may be due to smoking. Table 21 prepared from our figures is consistent with Table 20, but it is not significant, due probably to the small size.

Table 22 compares the cancer and control groups from the nurses' questionnaires by smoking habits and Table 23 shows the smoking habits of those individuals who had cancer of the buccal cavity. The relationship between cancer of the buccal cavity and smoking appears from our figures to be due to pipe smoking alone.

TABLE 23
BUCCAL CAVITY CANCERS BY USE OF TOBACCO

	Users	Non users	Unknown
Pipe	16	9	5
Cigarette	5	12	13
Cigar	10	12	8
Chewing	6	14	10

The study is being continued, narrowing the field of inquiry to the amount of salt eaten, the amount of condiments, canned goods, foods or dinarily eaten prior to illness, constipation and tobacco. In the 1928 study, the classification of foods is broader than in the present one.

DISCUSSION

Throughout the study the "Unknown" item has been the most unsatisfactory. Such conclusions as we have drawn are made on the assumption that the unknowns are distributed in the same ratio as the known items. This is the most probable inference but it is by no means assured. In those tables in which the unknowns differ markedly from the controls they could easily alter the findings.

It should also be noted that when any two groups are compared with respect to a large number of variables, the differences themselves will form a frequency distribution and some of the variables with statistical significance may thus be entirely due to chance. In order to determine whether or not there is real significance in a given instance it is necessary that additional samples be obtained.

CONCLUSIONS

Variations in the habits of cancer patients cannot be studied without the use of good con-

TABLE 21
CANCER SITES BY SMOKING

	Sites supposed to be affected by smoking	Sites not supposed to be affected by smoking	Total
Heavy smokers	9	17	26
Not heavy smokers	8	21	29
Total	17	38	55
Per cent of heavy smokers	52.8	44.8	47.3

ing group, pipe smoking seems to be the most important, as 73.1 per cent of the heavy smokers in the cancer group are pipe smokers and 72.6 per cent of the heavy smokers in the control group are pipe smokers.

In Table 20 there is a difference of eighteen per cent between the heavy smokers who had cancer of the buccal cavity and the total per cent of heavy smokers. This is statistically significant and indicates that a small part of the

TABLE 22
TOBACCO

	Cancer Group									Control Group								
	Users			Non users			Unknown			Users			Non users			Unknown		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Pipe	38	1	39	11	124	135	6	37	43	27	1	28	25	137	162	3	24	27
Cigarette	11	1	12	21	126	147	23	35	58	9	4	13	38	134	172	8	24	32
Cigar	23	1	24	16	125	141	16	36	52	29	0	29	22	136	158	4	26	30
Chewing	13	0	13	22	126	148	19	37	56	12	1	13	35	134	169	8	27	35

trols, which are most difficult to obtain. We believe our sample to be as nearly satisfactory as is reasonably possible to get on a large scale.

As only large differences between controls and cancers need be considered the size of the sample is adequate.

The collection of data on cancer patients without similar data on controls is valueless in the determination of factors influencing the causation of cancer.

Bad teeth in males are more common among the cancer group than among the controls. This applies to cancer in general and is not limited to buccal cavity cancer.

Heavy smoking is more common in the cancer group than among the controls. In our sample heavy smoking was largely pipe smoking and was particularly more common in those individuals with cancer of the buccal cavity.

The figures gave a suggestion of a hereditary predisposition to cancer but the volume of unknowns made definite conclusions impossible.

The cancer group ate less than the controls but this probably is wholly due to the presence of the disease.

Although we realize that the figures in this study are too small and incomplete for significant conclusions to be drawn, they are presented to show the methods used in order that others may conduct similar studies. We feel that other independent samples collected in a like manner would do much to either prove or disprove our findings.

We wish to make acknowledgment to Dr. Frederick Hoffman for the suggestion which instigated this

study to Dr. John A. Nichols for his courtesy in allowing us to interview his patients at Tewksbury to Miss Marv P. Cronin for collecting material at Tewksbury and editing all the questionnaires to the following visiting nursing organizations for giving so freely of their time in collecting the data: Instructive Nursing Association, New Bedford; Lowell Visiting Nurse Association; Worcester Visiting Nurse Association; Brockton Visiting Nurse Association; Community Nursing Association, Boston; Hingham Visiting Nurse Association; District Nursing Association of Fall River; Newton Visiting Nurse Association; Fitchburg Visiting Nurse Association; and the Lynn Visiting Nurse Association.

REFERENCES

- 1 Hoffman, Frederick. On the Causation of Cancer—Delivered before the American Association for Cancer Research, Buffalo, N. Y., April 7, 1924.
- 2 Special Report of the Departments of Public Health and Public Welfare Relative to the Prevalence of the Disease of Cancer Throughout the Commonwealth and Particularly of the Disease in Its Inoperable Stage or Form—House Document No. 1200, 1926.
- 3 Lombard and Doering. Cancer Studies in Massachusetts. 1. The Relationship Between Cancer and Density of Population in Massachusetts. Proceedings of the National Academy of Science, Vol. 13, No. 10, Oct. 1927.
- 4 Greenwood. A Review of Recent Statistical Studies of Cancer Problems. The Cancer Review, Vol. III, No. 3, March 1928.
- 5 Lane. Cancer and Intestinal Stasis. Practitioner, April 1924.
- 6 Report of the Work of the Cancer Commission for the Years 1923 to 1927. League of Nations, C. H. 621 (1), C. H. Cancer 4th (*).
- 7 Marwood. What Is the Root Cause of Cancer? John Bale Sons & Danielsson Ltd., London.
- 8 Hoffman. Cancer and Overnutrition. Prudential Press, 1927.
- 9 Hoffman. Third and Fourth Quarterly Report of the San Francisco Cancer Survey. Prudential Press, 1925.
- 10 Hoffman. Seventh and Eighth Quarterly Report of the San Francisco Survey. Prudential Press, 1927.
- 11 Dublin, Flake and Kopf. Physical Defects as Revealed by Periodic Health Examinations. American Journal of the Medical Sciences, Vol. CLXX, No. 4, October 1925.
- 12 Bigelow and Lombard. Experience With the Program of Cancer Control in Massachusetts. American Journal of Public Health and the Nation's Health, Vol. X, No. 4, April 1928.

THE EARLY DIAGNOSIS OF CARCINOMA OF THE RECTUM

BY DANIEL FISKE JONES, M.D., F.A.C.S.*

THE diagnosis of carcinoma of the rectum is dependent upon an opportunity to see the patient, that is, there should never be an error in diagnosis after the physician has had an opportunity to examine the patient. Training of the laity to seek advice on the slightest suggestion of any change in bowel habit or sensation or bleeding from the rectum is of the greatest importance. Training of the physician to make a digital and proctoscopic examination of the rectum is of equal importance. The training of one group and not the other would accomplish nothing. It is a fact that the only early symptoms are a change in bowel habit or sensation and bleeding.

An early growth before it effects obstruction should cause slight irritation and should cause slightly increased peristalsis or a sensation of some material still left in the rectum. Carcinoma of the bowel ulcerates early and therefore bleeding should be an early symptom. The usual

text-book symptoms, which are late symptoms, are

- (1) *Constipation*. This symptom cannot be present until the growth blocks the intestine more or less. At the present time when mineral oil and cathartics are used to such an extent the time when this symptom makes an impression is much later than formerly. One must not only inquire about constipation but must ask about the increase in the dose of cathartics and as to whether the patient is taking mineral oil.
- (2) *Constipation and Diarrhoea*. This is a text-book symptom which is rarely spoken of by the patient. Their idea is that they have frequent movements after constipation because they have taken cathartics. They rarely admit that they have a diarrhoea but do admit that they have from three to twenty discharges a day. They distinguish between frequent

small movements, or movements of pus, blood and mucous and diarrhoea This is a late symptom

- (3) *Pain* is not a prominent symptom There is a heavy aching feeling across the sacral region not infrequently, and in very late cases with metastases on the side of the pelvis there is pain down the sciatic Occasionally there are attacks of lower abdominal pain due to obstruction, but the great majority of patients deny that they have abdominal pain They frequently will admit that they have much rumbling of gas in the intestines, if they are asked
- (4) Loss of appetite comes on with increasing obstruction and loss of appetite causes
- (5) *Loss of Weight* Loss of weight is not due to the growth itself, as is shown by the fact that patients gain weight after a colostomy without removal of the growth
- (6) Any bleeding from the rectum is assumed by patients and by many physicians to be due to haemorrhoids, while as a matter of fact any bleeding from the rectum should be considered as due to carcinoma until it has been *proven* to be due to haemorrhoids Before obstruction takes place, that is with lateral wall tumors, the stool is usually formed The blood is, therefore, on the outside of the stool and will not give a positive chem-

ical test for blood unless blood is on the part selected After the bowel becomes obstructed, the stool is very soft or liquid, in which case blood becomes mixed with the stool and will give a positive chemical test No blood will be found either by chemical tests or macroscopically in the narrow scirrhus type of growth

- (7) *Age* It must be remembered that carcinoma of the colon and rectum may occur at any age Many cases of carcinoma occur in cases twenty years old or even younger

The above symptoms should be considered only as suggestive of carcinoma, and the diagnosis made by digital and proctoscopic examinations The electric-lighted sigmoidoscope should always be used No X-Ray examination should be made in suspected carcinoma of the rectum or colon until digital and proctoscopic examinations have been made and the rectum and lower portion of the sigmoid found to be normal Carcinoma of the rectum is frequently missed by the X-Ray examination Every effort should, therefore, be made to find the growth before one is put off the track by a negative X-Ray

Early diagnosis is of the greatest importance as operation will undoubtedly cure many of these cases when operated upon early The decision, as to whether the patient should be operated upon or not, should be made by the surgeon who has had experience in operating upon these cases

CARCINOMA OF THE GASTRO-INTESTINAL TRACT

BY DAVID CHEEVER, M.D., F.A.C.S.*

THE fundamental natural history of carcinoma of the gastro intestinal tract is precisely similar to that of carcinoma elsewhere If our present concepts are correct, the disease starts invariably as a local process, a lawless multiplication of epithelial cells forming a tumor which, unless destroyed in some manner, possesses an indefinite power of growth As it grows, it is locally invasive, that is, it encroaches upon the tissues of the organ in which it has started and destroys them by appropriating their blood supply and by pressure Thus invasive proclivity extends indefinitely to every contiguous structure In contrast to this progressive local growth, the tumor disseminates itself by the casting off of living cells which are carried by either the blood or lymph stream to distant parts of the body where each cell on finding a favorable environment may become the starting point of a new tumor exactly similar to its parent A different type of dissemination may exist by the casting off of living tumor cells into the cavity of the viscus or into the perito-

neal cavity, with subsequent implantation at some more or less remote point The rate of growth of the parent tumor and of its metastases depends on many factors only some of which are understood or suspected, for instance, the younger and more vigorous the individual the more rapid is the growth of the tumor, presumably on account of the greater vigor of the tissues generally and the consequent rapidity of cell multiplication Certain histological types of tumor cells appear to show greater rapidity of multiplication than others Thus in general it may be said that cells of the embryonic type, low in the scale of differentiation, show greater vigor of growth than cells of more highly differentiated varieties Needless to say, we are certain that there must be physiochemical conditions which favor or oppose the growth of tumors, of which we have, as yet, little or no understanding

Granted the correctness of this view of the origin of carcinoma, it follows that total local extirpation of the primary focus, before dissemination has occurred, will invariably cure carcinoma of the gastro intestinal tract, and any

*See record and address of author see This Week's Issue

respect in which the latter is unsuccessfully handled by surgical art must be chiefly due to inability or failure to attain this object. We know that a small epithelioma on the cutaneous surface of the body widely extirpated before dissemination has taken place should afford, in theory, a permanent cure in 100% of the cases. Experience has abundantly shown that carcinoma of the breast, attacked before demonstrable metastases have migrated to the regional lymph nodes, affords a five-year cure in from 70 to 75% of patients. Always in using the word "cure" in connection with carcinoma we deprecate its literal meaning because we realize that it is impossible to be certain that dissemination by the lymphatic or blood stream has not taken place and because we know that if this has occurred the secondary tumor in some distant part of the body may be extraordinarily slow in making its appearance.

Theoretically, we should expect exactly as good results in the treatment of carcinoma of the internal organs. Disregarding differences in growth rate due to the little understood peculiarities of the neoplastic cells themselves, it is evident that three things militate against our success.

First, the delay in diagnosis due to the concealment of the lesion by its deep situation,

Second, the frequent inability to perform an adequate excision on account of the impossibility of sacrificing too much of a vital organ or organs,

Third, the much greater liability to post-operative complications due to impairment of visceral function, the fear of which deters the surgeon from a very thorough operation and the occurrence of which may lead to a fatal issue.

The contrast in these respects between an external and internal neoplasm is very striking. In the case of a lesion anywhere on the cutaneous surface of the body or in the superficial structures like the mammary gland, diagnosis is likely to be early and a very radical and mutilating operation may be done without impairment of vital functions. The same disease in the alimentary tract, however, presents a far different problem. In the oral cavity, while diagnosis may be made comparatively early the field of excision must necessarily be small, and in the pharynx and oesophagus adequate excision is to all intents and purposes, incompatible with life. In the stomach and intestinal tract we are dealing with a condition midway between these two extremes. Diagnosis is likely to be much delayed but the possibility of radical removal of the lesion is considerable although the problem of regional lymphatic metastases is much more serious than in the case of the mammary gland, and also it must be admitted that the impairment

of visceral functions attendant on the operation is the cause of a much higher mortality rate.

It cannot be too strongly insisted or too often repeated that carcinoma in the gastro-intestinal tract is at first a local lesion abundantly capable of extirpation and susceptible of complete cure. The factors involved are first, early diagnosis and second, adequate operative removal of the disease.

Early diagnosis implies watchfulness on the part of the patient and intelligent interpretation of symptoms by his medical adviser together with utilization of every known method of examination. It is in helping to gain these objects that a public cancer campaign like the present may be of the highest benefit.

The classical picture of carcinoma of the stomach is familiar to all physicians and many laymen. The sufferer is two or three times more likely to be a man than a woman and to be in the middle or later period of life. Attacks of upper abdominal discomfort, "gas" and loss of appetite have been succeeded by loss of weight and strength, pallor and vomiting. On examination there is evidence of mal-nutrition and an appearance of illness (cachexia), secondary anemia and very likely a palpable mass in the epigastrium or liver. The vomitus may be at times bloody and changed blood is found in the stools. Gastric lavage shows a diminished or absent hydrochloric acid, evidence of stasis and of hemorrhage. This picture, or a slight variation, is rarely wrongly interpreted, but unfortunately it carries also the death warrant of the patient, for the disease has progressed much too far to permit of radical extirpation. Diagnosis must be made long before this or nothing radical can be accomplished by surgery. An analysis recently made of a series of cases of carcinoma of the stomach brings out many helpful points. Comparative youth is not incompatible with the diagnosis since a few cases occur in the decade 21-30, 8.4% occur in the decade 31-40, 24.5% in the decade 41-50, 35.5% in the decade 51-60, 25.4% in the decade 61-70 and 5% in the decade 71-80. The prevailing conception that carcinoma of the stomach is not likely to occur before 45 or 50 years of age must be modified. An analysis of symptoms first complained of in this group of patients shows that about 45% first noticed epigastric pain or distress, usually, but not necessarily, coming on after eating. In some 11%, belching of gas without especial distress was noted. Nausea or vomiting was the first complaint in 8.5%. Add to these the occasional patient, who first complains of sour stomach, dysphagia or a mass in the epigastrium and we find that in at least 75% of patients, the earliest symptoms, either from their location or character point directly to the stomach as their source. The remaining 25%, however, who complain first of general weakness and debility, loss of weight, constipation, pallor, back-ache, loss

small movements, or movements of pus, blood and mucous and diarrhoea. This is a late symptom.

- (3) *Pain* is not a prominent symptom. There is a heavy aching feeling across the sacral region not infrequently, and in very late cases with metastases on the side of the pelvis there is pain down the sciatic. Occasionally there are attacks of lower abdominal pain due to obstruction, but the great majority of patients deny that they have abdominal pain. They frequently will admit that they have much rumbling of gas in the intestines, if they are asked.
- (4) Loss of appetite comes on with increasing obstruction and loss of appetite causes.
- (5) *Loss of Weight*. Loss of weight is not due to the growth itself, as is shown by the fact that patients gain weight after a colostomy without removal of the growth.
- (6) Any bleeding from the rectum is assumed by patients and by many physicians to be due to haemorrhoids, while as a matter of fact any bleeding from the rectum should be considered as due to carcinoma until it has been *proven* to be due to haemorrhoids. Before obstruction takes place, that is with lateral wall tumors, the stool is usually formed. The blood is, therefore, on the outside of the stool and will not give a positive chem-

ical test for blood unless blood is on the part selected. After the bowel becomes obstructed, the stool is very soft or liquid, in which case blood becomes mixed with the stool and will give a positive chemical test. No blood will be found either by chemical tests or macroscopically in the narrow scirrhus type of growth.

- (7) *Age*. It must be remembered that carcinoma of the colon and rectum may occur at any age. Many cases of carcinoma occur in cases twenty years old or even younger.

The above symptoms should be considered only as suggestive of carcinoma, and the diagnosis made by digital and proctoscopic examinations. The electric-lighted sigmoidoscope should always be used. No X-Ray examination should be made in suspected carcinoma of the rectum or colon until digital and proctoscopic examinations have been made and the rectum and lower portion of the sigmoid found to be normal. Carcinoma of the rectum is frequently missed by the X-Ray examination. Every effort should, therefore, be made to find the growth before one is put off the track by a negative X-Ray.

Early diagnosis is of the greatest importance as operation will undoubtedly cure many of these cases when operated upon early. The decision, as to whether the patient should be operated upon or not, should be made by the surgeon who has had experience in operating upon these cases.

CARCINOMA OF THE GASTRO-INTESTINAL TRACT

BY DAVID CHEEVER, M.D., F.A.C.S.*

THE fundamental natural history of carcinoma of the gastro-intestinal tract is precisely similar to that of carcinoma elsewhere. If our present concepts are correct, the disease starts invariably as a local process, a lawless multiplication of epithelial cells forming a tumor which, unless destroyed in some manner, possesses an indefinite power of growth. As it grows, it is locally invasive, that is, it encroaches upon the tissues of the organ in which it has started and destroys them by appropriating their blood supply and by pressure. This invasive proclivity extends indefinitely to every contiguous structure. In contrast to this progressive local growth, the tumor disseminates itself by the casting off of living cells which are carried by either the blood or lymph stream to distant parts of the body where each cell on finding a favorable environment may become the starting point of a new tumor exactly similar to its parent. A different type of dissemination may exist by the casting off of living tumor cells into the cavity of the viscus or into the perito-

neal cavity, with subsequent implantation at some more or less remote point. The rate of growth of the parent tumor and of its metastases depends on many factors only some of which are understood or suspected, for instance, the younger and more vigorous the individual the more rapid is the growth of the tumor, presumably on account of the greater vigor of the tissues generally and the consequent rapidity of cell multiplication. Certain histological types of tumor cells appear to show greater rapidity of multiplication than others. Thus in general it may be said that cells of the embryonic type, low in the scale of differentiation, show greater vigor of growth than cells of more highly differentiated varieties. Needless to say, we are certain that there must be physiochemical conditions which favor or oppose the growth of tumors, of which we have, as yet, little or no understanding.

Granted the correctness of this view of the origin of carcinoma, it follows that total local extirpation of the primary focus, before dissemination has occurred, will invariably cure carcinoma of the gastro intestinal tract, and any

*For record and address of author see "This Week's Issue" page 524.

flow of the gastric contents and the more amenable it is to treatment. A person who has lost a good deal of weight from pyloric obstruction and who presents a discrete movable mass in the epigastrium is quite likely to prove to be a highly favorable case for radical operation. More often, unfortunately, the thick panniculus and the rectus muscles make it impossible to feel the tumor, even when it has reached considerable dimensions. Other positive findings on examination such as enlargement or nodularity of the liver or a small hard insensitive mass in the abdominal wall at the umbilicus or a hard gland behind the left sterno clavicular articulation near the thoracic duct are indicative of already existing metastases which render radical operation hopeless. Still later manifestations such as jaundice indicating widespread involvement of the liver, ascites and secondary implantation masses felt in other parts of the abdomen, perhaps by rectal or vaginal examination are characteristic of the latest stages of the disease.

Analysis of the gastric contents is hardly likely to be more than suggestive. The finding of a partial or complete achlorhydria especially with the presence of blood and evidence of stasis is strongly suggestive but there are many non-surgical causes for diminished acidity, especially pernicious anemia, and blood may be due to a peptic ulcer or to rupture of varices about the cardia or to traumatism by the tube. The demonstration of tumor cells in the debris from the stomach is too rare and difficult to be of much use. As a working rule, subject to many exceptions, it may be said that a simple ulcer is almost always associated with a high or at least a normal acidity while carcinoma usually is characterized by the diminution or even the absence of hydrochloric acid. The demonstration of persistent occult bleeding by examination of the stools is important but obviously may be due to ulceration anywhere in the alimentary tract and does not indicate its location. By far the most important method of examination is by x-ray. Fluoroscopy and films after the patient has taken an opaque medium like barium sulphate will give a diagnosis of carcinoma of the stomach in a very high percentage of all cases and will give evidence of the presence of a lesion of uncertain type in most of the remainder. The typical filling defect of carcinoma is unmistakable. In patients whose disease has not progressed sufficiently to produce this defect it will almost always be possible to arrive at a diagnosis by observing the failure of a peristaltic wave to pass over a certain area of the stomach, thus indicating an induration and loss of elasticity in the wall at that point, or the disturbance of the normal rugae of the mucous lining over a given area will indicate a similar change. Broadly speaking it is only the

very unusual type of carcinoma situated at the extreme fundus of the stomach to the left of the cardia and not encroaching upon it, which may escape observation and it should be noted that in most instances where the appearances justify a doubt they present nevertheless as alternative diagnoses lesions which justify or demand operative exploration. Such instances are certain types of gastric or pyloric ulcer, and gall bladder, pancreatic or transverse colon lesions which distort the outline of the stomach or interfere with its function. But in relation to x-ray a warning should be issued that such an examination in the hands of an inexperienced man may be inconclusive or wholly misleading and may be much worse than no examination at all because if a mistake is made it may lead to a false feeling of security and to fatal delay.

An exact and thoroughly justifiable method of diagnosis in certain instances is a surgical exploration. The laity should be educated to understand that such an incision, in the hands of a skilful surgeon, is nearly harmless and will be quickly recovered from and is far to be preferred to the uncertainty and possibly fatal delay in doubtful cases. Surgeons themselves should adopt as a routine procedure, except where contra-indicated the manual exploration of all the abdominal contents including the stomach whenever the abdomen is opened for any other purpose. This gospel has been preached by the masters of surgery ever since the abdominal cavity has become a legitimate field for their art, and yet it is surprising how widespread is the neglect of it. In a recent trip to Europe, thirteen important surgical clinics were visited by the writer and in hardly any instance was this routine abdominal exploration carried out. It is certain that some early instances of carcinoma of the stomach would thus be disclosed.

If the patient's general condition is such as not to preclude radical operation the physician should never permit himself to be totally discouraged by the apparent extent of the growth. In very many instances the lesion is confined to the stomach for a long period and the first relay of regional lymph nodes, situated as they are especially along the lesser curvature of the stomach at the attachment of the gastro hepatic omentum do not preclude the possibility of radical removal. One of the surprising facts brought out by the analysis above mentioned is that in the whole series of patients who were explored there were metastases in the liver in only 23.3% and that among a series of patients who died of the disease without operation and who were examined post-mortem metastases had not yet taken place to the liver in 22.8%. In other words in a considerable number of patients although the disease may be locally extensive in the stomach it does not become totally

of appetite or general abdominal pain, constitute the group in which both patient and physician may be gravely misled as to the source and significance of the symptoms.

Unfortunately, it is a very common experience that when the onset of symptoms has been followed by correct diagnosis and operation, the condition has been too often found to be already inoperable. The explanation lies, of course, in the insidiousness of the disease and its failure to cause symptoms, due to the fact that the stomach has a marvelous margin of physiological efficiency or even, as is well known its digestive function may be largely dispensed with under certain conditions without serious interference with the patient's economy. Although the stomach plays a most important rôle as a reservoir and mill where the digestion of carbohydrates is carried on for some time after insalivated food has reached it, where proteolytic digestion is begun and the food mass, as a whole is subdivided and liquefied in preparation for intestinal digestion, it is nevertheless true that these functions may be largely abrogated with little effect upon the economy, provided only that a reasonably clear passage remains to transmit the food from the oesophagus to the duodenum, and provided also that hemorrhage from ulcerated tumor surfaces or absorption of toxic material do not attract attention by the anemia and debility which they occasion. Every surgeon has seen patients in whom the stomach was very widely involved by disease although symptoms had been present for but a brief period. In the analysis above mentioned, the duration of symptoms was noted in a series of patients in whom the disease was found to be so advanced that even an exploratory laparotomy or a palliative operation was not undertaken, and it was found to be 2 months or less in nearly 10%, from 2 to 6 months in 27% and from 6 to 12 months in 13%. Further evidence of this is shown in this same series, the duration of life in a group of inoperable cases after they first came under the observation of the surgeon who did not attempt operation was four weeks or less in 45% of the cases. Considering these facts it is evident that but few cases are found amenable to radical operation.

How then is earlier diagnosis to be assured? Only by eternal vigilance on the part of patient and physician and by the education of the latter to use every reasonable means of diagnosis and to interpret sagaciously the evidence obtained. Since doctors, being but human are sometimes fallible or careless, it is very desirable that patients should be educated in methods of diagnosis sufficiently to demand them, if they are not proposed by his medical attendant. Because the greater majority of symptoms of which a patient may complain have their cause in minor functional disturbances which are transient and self-limited, it is usually the tendency of both patient and physician to minimize their

importance and employ none but the simplest diagnostic measures. Doubtless if every symptom were always considered by the physician in the light of its most serious possible interpretation an enormous amount of unproductive diagnostic effort would be wasted, but it is safe to say that there would be a most satisfactory increase in the number of cases of carcinoma of the stomach which were found at operation to be operable. A reasonable mean between the two extremes should be striven for. Any symptoms pointing toward the stomach or epigastric organs which are not relieved by symptomatic or expectant treatment in the course of a week or two should be subjected to adequate diagnostic scrutiny. These symptoms in their order of frequency may be enumerated as pain in the epigastrium, a sense of fullness and distress after eating, sensations of the accumulation and belching of gas, anorexia, nausea or vomiting, in fact, any noteworthy change in the patient's digestive habit should receive serious attention. More over symptoms of less pointed significance should not be ignored. If a previously normal individual is noted gradually to be becoming pale or to lose weight or to seem lacking in strength and ambition or to be complaining of loss of appetite or dorsal back-ache, it should be assumed that some organic cause exists for such phenomena rather than that the condition may be dismissed as due to some trifling disarrangement of function.

METHODS OF DIAGNOSIS

A carefully taken and critically analyzed history is the most important preliminary method and will often permit diagnosis. In the obviously neurotic or chronically dyspeptic individual who has had for years a more or less vague symptom-complex pointing to the stomach and who does not present any noteworthy change especially of an objective character like loss of weight, anemia or vomiting, the history is much less likely to be significant than in a previously well individual who gives a story of a possibly slight but persistent complaint which has not yielded to simple measures. The next step is a thorough physical examination which is likely to be negative, but may disclose a mass in the epigastrium which moves downward with inspiration. A widespread belief exists that when carcinoma of the stomach has advanced sufficiently to show a palpable mass, it is almost certain to have reached the inoperable stage. This is erroneous. Statistics show that in about 70% of cases the disease starts at or near the lesser curvature between the incisura and pylorus, which is precisely that portion of the stomach which, being covered neither by the costal arches or liver is most readily accessible to palpation, moreover the nearer to the pylorus the growth is the more likely is it to have caused early symptoms on account of obstruction to the out-

In this series of cases the location of the disease was as follows: right colon including the caecum and hepatic flexure 48 cases or 26.2%, transverse colon, 17 cases or 9.3%, splenic flexure and descending colon 20 cases, or 10.9%, sigmoid flexure 77 cases or 42%. The location is of great importance as bearing on the symptomatology because the fecal current is liquid when it passes through the ileocecal valve, becomes less fluid or even pulsatious in the transverse colon and loses still more of its water in the descending colon and sigmoid. Therefore a degree of blocking of the lumen which would cause partial obstruction in the left colon would not act thus in the right colon and this is the more true because the lumen of the descending colon is as a rule considerably less than that of the more proximal portion of the bowel.

If the physician carries in his mind a single and relatively unvarying clinical picture of carcinoma of the colon he is likely to be perplexed and misled because the disease in the right colon presents such a very different picture from that in the left colon, with the transverse portion of the bowel intermediate between the two. In the caecum and ascending colon the disease is extremely insidious and obstructive symptoms appear only very late if at all because the liquid fecal stream can find its way through a very small lumen. For a long while after the onset of the disease there are probably no symptoms at all. After ulceration of the surface of the neoplasm occurs the irritation may cause spasm and painful contraction of the bowel expressing themselves as mild attacks of colicky pain. These have no definite relation to eating or to bowel movements. A sense of fullness and accumulation of gas is often complained of which is misleading since as a rule the diseased colon is irritable and empty. Such vague symptoms referred to the right iliac fossa often lead to the diagnosis of disease of the appendix leading all too often to the removal of that organ through an incision too small to permit of adequate exploration. The stools are usually normal in gross appearance but if carefully followed will show the persistent presence of small amounts of blood,—often only to be determined by chemical test. Sometimes the irritability of the colon at the diseased point is propagated to the distal part of the bowel causing a tendency to frequent loose stools. Physical examination will often reveal nothing except a vague and inconstant sensitiveness over the right colon often with slight muscle spasm. Later when the disease has become more advanced a massive firm insensitive tumor may be felt which does not descend with respiration and is more conspicuous anteriorly than in the lumbar region. X-ray after the ingestion of the opaque meal may show little or nothing because the barium is so unevenly scattered and dispersed that this portion

of the colon is not outlined. There may be a tendency to stasis in the terminal ileum due to spasm of the ileocecal valve or to actual obstruction at that point but at the region of the tumor itself the bowel is likely to be empty. If suspicion points at all to a lesion of the colon a barium enema should never be omitted. This may show enough obstruction to prevent complete filling of the bowel proximal to the lesion or a certain degree of irregularity of contour may be noted together with a tendency on the part of the bowel to refuse to harbor the barium without irritable contraction. In carcinoma originating in the caecum it is not very unusual for the growth to obstruct the lumen of the appendix at its junction with the caecum and thus by producing an appendiceal block to cause a true and characteristic attack of acute appendicitis which may lead to operative removal of the appendix without the discovery of the underlying disease. Another not uncommon complication is perforation of the bowel causing either peritonitis or a retrocecal and extra-peritoneal abscess forming a tender mass accompanied by symptoms of constitutional disturbance.

The point for physicians to remember is that persistent discomfort and pain in the right abdomen if unaccounted for by other causes and especially if accompanied by gross or chemical traces of blood in the stools should indicate the necessity of an exploration which will not be sufficient if carried on through a small incision adequate only for the removal of the appendix. The insidiousness of this disease and the occasional fatality of the most conscientious care on the part of both physician and patient are illustrated by the case of W. H. D. (S. No. 29995) a man 68 years of age who entered the Brigham Hospital on October 31, 1927.

The history showed that the patient consulted a competent and careful physician in March 1925 because he had read of the importance of periodic health examinations and thought it advisable to be looked over. He had no symptoms of any sort and a careful general examination was essentially negative and he was given a clean bill of health. He reported on December 3, 1925 that he felt perfectly well. On March 16, 1926 he reported that he had been perfectly well during the year since his first examination and another complete physical examination was negative except for some evidence of arteriosclerosis. Nearly 19 months later in October 1927 he again consulted the physician saying that he did not feel quite so vigorous that his appetite was not so ravenous and that he was a little short of breath on exertion and got more easily tired and noticed slight dizziness on bending over—complaints quite compatible with his age which was now 68. There were no symptoms of indigestion and the stools were regular and normal. On this occasion his physician found that he had lost five and a half pounds of weight since the first examination and that he did not look as well as formerly. The liver border which had always been palpable seemed of rather firm consistency. The blood showed a slight secondary anemia. Stool examination showed positive guaiac

inoperable by virtue of hepatic metastases. A further very important justification for operation is the fact that if it discloses a radically inoperable condition it is very often possible to perform a palliative operation for the relief of the obstruction which may make the patient quite comfortable until a short time before his death.

The results of exploration on a series of patients showed that over 60% presented a condition too advanced for any attempt at radical or palliative operation. In 22.4% it was possible to do only a palliative operation for the obstruction or for perforation, involving a mortality of 13% which was largely due not to the seriousness of the operation performed but to the severity of the condition which made operation imperative. In less than 10% of patients was it possible to attempt a radical operation, which carried an operative mortality of 13%. Those who recovered, lived a varying number of years and a number are still living after a lapse of time which justifies the belief that a radical cure has been effected. Such a record would be discouraging were it not for the absolute conviction on the part of experienced surgeons that with early diagnosis it may be vastly improved.

CANCER OF THE INTESTINAL TRACT

The duodenum, jejunum and ileum are extraordinarily immune from carcinoma. The mere fact that a distorting or deforming lesion is noted by x-ray to be beyond the pylorus justifies the radiologist in saying that it is ulcer rather than cancer which, of course, is corroborated by other characteristics. A neoplasm which begins just proximal to the pylorus may spread up the lesser curvature and over both surfaces of the stomach and yet appears to be arrested at the pylorus from extension distally. An exception to this rule is a not very uncommon form of carcinoma originating at the biliary papilla and thence spreading, by continuity, to the duodenal wall. Involving eventually as it does the common bile duct, pancreatic duct and the pancreas itself and being in such close proximity to other important structures, this lesion is practically inoperable. Occasionally a fortunate circumstance will permit a radical resection at the expense of a very high mortality rate, but it cannot be expected that in this situation a neoplasm will ever offer a brilliant surgical prospect. In the jejunum and ileum, carcinoma is so rare that but one case has been observed at the Peter Bent Brigham Hospital in the fifteen years of its existence. This part of the alimentary tract then may be ignored in a discussion of carcinoma for the purposes of a public campaign for cancer control.

The colon is however a region affected by carcinoma in more than one-half as many cases

as the stomach and here we find that our record is decidedly more reassuring. The colon is physiologically less important to the individual than is the stomach and it is evident that the relatively small portion of its total length which is the seat of a malignant neoplasm may be removed without impairment of function. Moreover the colon is anatomically more accessible and on account of the simplicity of its blood supply and other relations is technically more easily operated on. Still again, the fact that its lumen is so much less than that of the stomach causes an obstructing lesion to cause symptoms at a much earlier date especially in the distal colon whose contents are of a pulsatious or semi-solid consistency. Metastases seem on the whole to occur later in a lesion of the colon than of the stomach and the long mesentery permits the first relay of regional glands to be comparatively easily extirpated. Finally, it is well known that an operation in the lower abdomen is less serious in regard to possible post-operative complications than an operation of equal severity in the upper abdomen, chiefly due apparently to the liability of the latter to pulmonary complications on account of the close proximity of the thoracic cavity. For these reasons carcinoma of the colon is likely to permit of earlier diagnosis and of technically easier and less dangerous operative removal than the same disease in the stomach.

A review of the records of the Peter Bent Brigham Hospital from its foundation in 1913 to the end of 1927 shows a total of 183 cases of carcinoma of the colon (carcinoma of the rectum involving also the lowest portion of the sigmoid is not here considered). The age incidence is shown in the following table.

Age	No. of cases	Per cent.
21-30	7	3.8
31-40	14	7.6
41-50	30	16.4
51-60	65	35.5
61-70	44	24.0
71-80	17	9.3
81-90	2	1.09

While this table shows, as is usual in malignant disease, that the maximum incidence is in the sixth decade when 35.5% of the cases occurred (which is exactly the same figure as in the case of carcinoma of the stomach), it is very important to know that nearly 4% of the instances occurred in persons 30 years of age or under,—nearly four times as many as in the case of the stomach. Moreover an appreciable number occurred in the ninth decade which period showed no instances of carcinoma of the stomach. The disease in the colon therefore appears to be more prevalent in comparative youth and in extreme age than is carcinoma of the stomach and evidently it is necessary for the practitioner to bear this in mind although his preconception of cancer as a disease of middle life is very strong.

adhesions to the proximal part of the transverse colon was removed and the ileum anastomosed to the transverse colon end to side. Pathological examination showed adenocarcinoma. An uninterrupted convalescence ensued and now ten years later the patient shows no evidence of recurrence and has been actively engaged in his profession without symptoms referable to the disease. It is worth noting that three years before he came under observation an alleged chronic appendix had been removed elsewhere through a small incision without relief. There can be no question that at that time the neoplasm was present and easily demonstrable if the surgeon's hand had been introduced into the abdomen and the viscera palpated.

The other patient was a woman M L E (Brigham Hospital No S 9003) age 60 who had always been slender and had had poor appetite and irregular constipated bowel function requiring daily use of cathartics for years. One year previously had occurred an attack of obstipation pain and vomiting relieved after three days by enemata and turpentine supes. Since then she had complained of lassitude, fatigability, increasing constipation and tenderness in the left lower abdomen and more or less constant dull pain in that region not relieved by anything in particular. She had never noted blood in the stools. Examination showed a small mass in the left lower quadrant. Rectal examination was negative. Barium x-ray studies showed a filling defect at the junction of the descending colon and sigmoid without obstruction. At operation a malignant adenocarcinoma in the descending colon with its mesentery was resected. An end to end anastomosis was made with out any proximal temporary colostomy. The convalescence was uninterrupted. Pathological examination showed adenocarcinoma with metastases to the mesenteric lymph nodes. Eight years later she had no symptoms referable to the disease and barium x-ray studies showed a normal gastro-intestinal tract. She died soon afterward of an acute non related disease.

It scarcely needs to be pointed out that an attack of obstipation severe enough to cause pain and vomiting of three days' duration should have led at once to every appropriate diagnostic measure. It is precisely in such chronically constipated ailing women that the significance of symptoms is disregarded.

The story of another patient illustrates extraordinarily the amenability of this disease to surgical relief.

M E F a woman age 32 (Brigham Hospital No S 30774) came under observation on February 27th 1928. She began to notice blood in the stools about four and a half years previously and was treated locally for alleged hemorrhoids. She became anemic and debilitated and had malaise, weakness and dizzy spells. For the last three years she had also noticed a few clots in the menstrual flow but the periods were otherwise normal. Appetite was excellent through out and there was a moderate tendency to constipation. About three months before admission she began to notice a dull pain in the lower abdomen unrelated to any physiological function. None of these symptoms however were sufficient to keep her from uninterrupted work. On January 10th she consulted a physician on account of the pain. A mass was felt in the abdomen which the patient stated was freely movable and which sometimes lay below the umbilicus but could readily be pushed up to the costal margin. A diagnosis of fibroid tumor of the uterus was made and a laparotomy performed at which

time a malignant tumor variously stated by her attendants to be of the stomach and of the sigmoid was found. Extensive metastatic glands were said to have been present, one of which was removed for diagnosis and was later reported by a competent pathologist to show chronic inflammation. The wound was closed and the patient sent home after ten days with the diagnosis of inoperable cancer. She had two x-ray treatments. Three weeks after her return home the wound burst open and a profuse fecal discharge appeared which had since persisted. On admission to the Brigham Hospital examination showed a moderately anemic somewhat emaciated and asthenic intelligent young woman with a large firm insensitive mass in the abdomen subjacent to a partially healed wound at the upper angle of which was a granulating sinus with a profuse fecal discharge. Vaginal examination showed a normal cervix, uterus and adnexae. Rectal examination was negative. Barium x-ray examination showed irregularity of the transverse colon and narrowing and fixation of a loop of sigmoid at a point subjacent to the abdominal wound. The patient and her family were eager to grasp at the very remote possibility offered by another operative attempt. Operation was done on March 2 1928 under the difficulties occasioned by the presence of a fecal fistula and an old infected wound. A huge malignant mass primary in the transverse colon and involving by direct extension an adherent loop of ileum and of sigmoid flexure and also the greater curvature of the stomach as well as the abdominal wall was found. However exploration showed no involvement of the liver and no certain evidence of metastases to lymph nodes. Complete removal was done involving resection of the transverse colon a loop of ileum and of sigmoid and of stomach and abdominal wall. An end to end anastomosis of the ileum was made the sigmoid and stomach repaired and the ends of the resected transverse colon brought out of the wound according to the Mikulicz procedure. It was impossible to obtain an aseptic field on account of the fecal fistula. The patient survived the immediate operation surprisingly well but died in five days of peritonitis. Autopsy showed satisfactory repair of the intestinal anastomoses without evidence of leakage and that the peritonitis was due to the necessity of working in an already infected field but the point of vast significance is that it showed absolutely no evidence of metastases to liver or lymph glands even the mesenteric nodes being uninvaded. In other words after nearly four and a half years of bleeding and in spite of the very extensive local growth of the malignant tumor it nevertheless had not disseminated itself by the blood or lymph stream and was perfectly susceptible of successful and complete removal. Had the radical operation been done seven weeks earlier at the time of the first fruitless exploration it would almost certainly have been successful. Had it been done at any time during that long period of relatively symptomless bleeding from the rectum its success would have been still more assured. It should be added that careful questioning of the patient failed to reveal that any of the usual symptoms of hemorrhoids had ever existed.

In the Brigham Hospital series above referred to comprising 183 cases of carcinoma of the colon, 30 patients were not operated on because either operation was refused or it afforded no prospect of palliation or cure. In 13 patients a simple exploration was done which showed an inoperable condition either for palliation or cure. There was no mortality in this group. In 65 patients palliative operations were carried out with 26 deaths or a mortality of 40%. These

and benzidine tests. Barium x-ray studies were at once made and showed a filling defect at the hepatic flexure, with moderate proximal stasis. Operation was at once advised and on November first the abdomen was opened and an extensive adenocarcinoma of the hepatic flexure was found with metastases to mesenteric glands, numerous metastases in the liver and numerous small peritoneal implantations throughout the abdominal cavity. Radical cure was of course out of the question and a palliative colocolostomy seemed indicated to prevent obstruction which it seemed must necessarily soon appear, but it was realized that the patient was constantly losing blood and his condition seemed so good that it appeared justifiable to resect the growth with a view to stopping hemorrhage and averting obstruction at the same time. The operation was apparently well borne but ten days later the patient succumbed to peritonitis and pulmonary complications. Autopsy showed in addition to the findings already mentioned metastases to the lungs and a secondary area of adenocarcinoma in the distal part of the transverse colon, apparently a transplant from the first. From our knowledge of the natural history of the disease it seemed certain that this malignant process which is usually of slow growth in an elderly man must have been well established at the time of his first periodical health examination more than two and a half years previously, and yet, there was absolutely no cause to suspect its existence. It is evident that the disease is so insidious that it may be impossible of diagnosis at an operable stage unless indeed a complete gastro intestinal barium study including an enema is to be part of every periodic health examination.

The typical neoplasm of the left colon presents symptoms almost solely due to obstruction of the lumen of the bowel. A slight constipation is noted or any already existing degree of constipation increases. As time goes on a tendency to generalized colicky pain appears, usually below the level of the umbilicus, a sensation of abdominal fullness and accumulation of gas sometimes precedes this pain which is relieved by a bowel movement. Attentive daily observation of the stools by the patient will usually show from time to time a small amount of relatively fresh blood, although usually the patient on questioning will state that he has noted nothing abnormal. As time goes on, constipation, the attacks of colicky pain and the abdominal distension increase and the former is sometimes alternated with brief attacks of diarrhoea, due apparently to nature's effort to overcome the increasing obstruction by liquefying the stools. Up to this time physical examination may be absolutely negative or in a favorable subject a small mass may be felt in the left abdomen which does not disappear after catharsis or on enema. In the case of the sigmoid flexure the best chance of feeling the mass is for the examiner, with the patient lying on his side, to make a bimanual examination with one finger in the rectum and the other hand palpating the abdomen. Rectal examination alone is usually negative, a stool examination sooner or later will show either grossly recognizable blood or positive chemical tests and x-ray examination, after the ingestion of barium by

mouth will show a tendency to stasis, but it will be a matter of good fortune if any single film shows clearly the neoplastic constriction. If the slightest suspicion of its presence exists however, a barium enema should be invariably made which will give positive evidence of an obstructing constriction in a very high percentage of patients who show the symptoms above mentioned. As the disease progresses, enlargement of the liver may be noted from metastases, or other manifestations of a disseminated malignant process. It is more usual, however, before evidence of this condition appears, for the neoplastic obstruction to shut down entirely and cause the well known symptoms of low intestinal obstruction,—obstipation, failure to pass gas, abdominal distension, generalized colicky pain, and vomiting at first gastric in character and becoming progressively biliary, jejunal and semi-fecal as the days go by. If the symptoms approach those of complete obstruction, barium should never be given by mouth.

This picture which carries such a threat of fatal consequence must not discourage the physician from immediately seeking competent surgical advice, for these neoplasms of the left colon, especially of the sigmoid flexure where they are most common may have existed so long that they have completely occluded the bowel and caused total obstruction and yet still themselves be wholly local and susceptible of a complete operative removal with permanent cure.

The symptomatology and diagnosis of carcinoma of the transverse colon are intermediate in character between those typical of the right and left portions of the bowel and need no special description except the notation that because of its position such a lesion is much more easily demonstrated by palpation and therefore likely to be diagnosed rather early.

As a foil to the somewhat discouraging picture drawn above of the fatal insidiousness of carcinoma of the right colon, mention may be made of a certain day in July 1918 when two patients were operated on at the Peter Bent Brigham Hospital.

The first C. L. M. a man age 53 years who had had chronic pulmonary tuberculosis and a duodenal ulcer for years sought advice for nocturnal polyuria. The history brought out the existence of constipation distress after eating belching of gas for a long period and the presence of occasional occult blood in the stools—symptoms attributable to the ulcer. For about a year there had been attacks of colicky abdominal pain, relieved by belladonna and gross blood had been noted occasionally in the bowel movements supposedly due to hemorrhoids. The polyuria complained of proved to be of no importance but fortunately routine physical examination showed a small mass in the right abdomen. The stools showed persistent occult blood. Barium by mouth showed some stasis in the caecum and by enema a slight delay at the hepatic flexure with irregularity of outline but no obstruction. Immediate operation was done and a large malignant tumor involving nearly the whole of the ascending colon with secondary

the ureter and in the bladder. Consequently the entire ureter, as well as the kidney, should be removed. The non-papillary carcinomas of the renal pelvis involve the ureter only by extension, not by transplantation. Since they are less likely to bleed than the papillary tumors, they do not give symptoms so early, and are likely to have given rise to metastasis before they are discovered.

Embryonal neoplasms occurring in the kidney of infants are usually discovered because of the tumor which they produce in the flank. Hugh Young states that these tumors frequently originate from the retroperitoneal tissues about the kidney, involving the kidney in their growth. Their removal is indicated but recurrence is the rule.

Tumors of the ureter are rare. Jeanbrau in 1914 had collected only 30 cases of primary tumor of the ureter (H. H. Young). In the one case which I have seen the tumor arose just within the ureteral orifice and prevented the passage of a ureteral catheter. This was a highly malignant carcinoma which recurred in spite of the removal of the kidney, ureter and adjacent bladder wall.

Primary ureteral tumor may be suspected if the jet from the ureter is bloody and the urine drawn by the ureteral catheter from the renal pelvis is clear. The diagnosis may be made certain or practically so, by a ureterogram.

TUMORS OF THE BLADDER

A man of 45 was referred to me on March 30th 1928 by Dr. F. C. Gunter because on several consecutive examinations of the urine numerous red blood cells were found in the sediment. The urine had never been grossly bloody nor had the patient noticed any symptoms except a slightly increased frequency of urination and a slight discomfort in the suprapubic region first felt 9 months ago. Cystoscopy showed a solid round pedunculated tumor, evidently malignant, rising from the roof of the bladder. At operation April 7th, the condition was found to be as it appeared through the cystoscope. A section of the bladder wall with the tumor rising from the center was excised with the diathermy knife. Pathological examination of the specimen removed showed it to be a squamous cell carcinoma of moderate malignancy. There was no evident involvement of the bladder wall.

This case illustrates the importance of careful urinalysis and of cystoscopic investigation when red blood cells are found. Blood in the urine is the one out-standing sign of bladder tumor, although sessile epitheliomas, covered by intact mucosa, may grow to an advanced stage without causing hematuria.

There are, according to Ewing's classification two common varieties of bladder tumor: (1) papilloma, which is fibrous, benign, or malignant and (2) carcinoma. There are other rare forms, but they are clinically unimportant. Papillomas of the bladder vary in the degree of their malignancy. In a few cases, they remain benign for years. I have under my care such a case. In 1917

he was operated upon for tumor of the bladder. The growth recurred and when I saw him in 1925 the entire bladder wall was covered with large and small pedunculated tumors. The patient was anemic from loss of blood, and septic and uremic from infection of the bladder and kidneys. The bladder was opened, the larger tumors cut off with the diathermy knife, and the entire surface of the bladder cavity thoroughly treated by electrocoagulation. After a long convalescence, during which the bladder was drained suprapubically, he healed up and regained his health. Since then his urine has become clear of infection, and the few recurrences which have developed have been destroyed through the cystoscope.

All papillomas are potentially malignant. Bneger places the proportion of carcinomas preceded by papilloma at 30 to 36 per cent. It is not always possible to differentiate between the benign and the malignant papillomas by their cystoscopic appearance. Carcinomatous degeneration in a papilloma produces a more solid appearing tumor, with the individual fronds presenting rounded, shiny tips instead of pale fringe-like ones. Areas of necrosis are indicative of malignancy. Whether the tumor is actually malignant or not makes little difference in its treatment. If it measures no more than 2 cm in its greatest diameter, and has a small pedicle it can probably be destroyed by electrocoagulation through the cystoscope. The modern apparatus for bipolar electrocoagulation is so efficient that tumors formerly believed too large to be treated by this method can now be successfully destroyed by a few treatments. After the tumor has been eradicated, the patient should be cystoscoped at frequent intervals so that recurrences may be destroyed while still small. In some cases, fortunately a minority, malignant degeneration has already taken place in the base of the pedicle, so that in spite of thorough electrocoagulation the growth will recur as a definite sessile carcinoma. In spite of the possibility of this I am in favor of destroying moderate sized papillomas through the cystoscope instead of removing them by resection of the bladder wall. In my experience, recurrence is just as likely to occur after excision as after electrocoagulation. It stands to reason that the earlier these tumors are discovered the better the prognosis.

If the papilloma has a thick pedicle or none at all the bladder should be opened and the growth destroyed by thorough electrocoagulation or by the implantation of seeds of radium. I prefer the former method because of the more rapid healing of the treated area. Radium burns may persist for over a year with accompanying infection and possibly stone formation. Deep infiltration of the bladder wall in my opinion is better treated by radiation than by electrocoagulation.

operations comprised drainage of peritonitis caused by perforation of the malignant disease or colostomy for complete obstruction. There were a few instances of entero colostomy or colocolostomy to sidetrack the growth and relieve obstruction. This large group of palliative operations included, as the very high mortality shows, mostly desperate cases in which operative relief was offered as a last resort. Most of these operations were done under novocain and no such operation was withheld if it offered any reasonable chance of temporary relief from an unsupportable condition. There were 74 radical resections with 12 deaths, giving a mortality rate of 16.2%. The 62 patients in this group who made an operative recovery left the hospital relieved of their symptoms and many, as in the two instances cited above, have lived many years and may be considered "cured." The final figures in the follow-up statistics of these patients are not as yet available.

From the point of view of those who are interested in the *American Society for the Control of Cancer, Inc.*, what interpretation may be

made of this brief review of the status of carcinoma of the gastro-intestinal tract as regards its feasibility of cure? There can be but one answer—that the disease is curable and that while we await the demonstration of the cause of cancer which will be followed in all probability by the discovery of a non-surgical method of cure, immense progress may be made in the efficiency of the surgical treatment through the education of both physician and layman. The latter must disabuse his mind of the gloomy conviction that cancer is hopeless, the former must be aroused to take action at the first warnings of the disease. The earliest symptoms of cancer wherever situated in the human body are trivial in character,—it follows then that all trivial symptoms unless they yield promptly to simple measures must be considered potentially as the first evidence of a terrible but curable disease and subjected to every available and proper diagnostic measure. The promotion of these objects by a campaign of education constitutes at present the most promising way of winning ground in the fight against cancer.

MALIGNANT DISEASE OF THE GENITO-URINARY TRACT

BY GEORGE GILBERT SMITH, M.D., F.A.C.S.*

TUMORS OF THE KIDNEY AND URETER

On March 14, 1925, J. W. C.—, a carpenter 68 years of age was referred to me by Dr. E. M. Fuller of Bath, Maine. His sole complaint was hematuria. The first attack of this was in September 1923. No more blood was seen for one year, he then bled again and had had several attacks since. Except for the difficulty which he experienced in passing clots of blood, he had no urinary symptoms. There had been no pain in the loins, no loss of weight or strength. On abdominal palpation the lower pole of the right kidney was easily felt, it was nodular, movable and as large as a small orange. The left kidney was not palpable. The prostate was small and soft and there was no residual urine. The urine was hazy and showed a slightest possible trace of albumen, no sugar, 5-10 red blood cells and 2-4 leukocytes per field, one large clump of pus, and 3 granular casts. Cystoscopy showed a normal bladder. Both ureters were catheterized; a divided function showed 15% of phthalein from the left kidney and but 5% from the right. A right pyelogram showed a filling defect of the lower and middle calyces which was typical of renal tumor. On March 25, 1925 a right nephrectomy was done. The kidney tissue in its lower 2/3 was replaced by a hypernephroma.

Two years later the patient returned for examination. He felt well, was working regularly, and showed on careful examination no evidence of recurrence.

In this case the presenting symptom was hematuria, a sign which always demands cystoscopic investigation. Hematuria usually brings the patient to his doctor post haste, but it is a sad fact that not infrequently the patient is

dismissed with "reassurances" and the promise to investigate "if the bleeding keeps on."

In the majority of cases of renal tumor hematuria is not the first symptom. In a study of 62 cases of hypernephroma occurring at the Massachusetts General Hospital Smith and Shoemaker found that only 27 of the 62 cases showed gross blood in the urine, the most consistent finding was that of tumor. An enlarged kidney was found in 48 cases, in some of which the patient himself had first noticed the mass. Every case of enlarged kidney should be regarded as suspicious, whether or not it is accompanied by hematuria, and should be subjected to cystoscopic study, for it is possible to have an advanced hypernephroma without hematuria or pain. Pain was noted in 32 of these 62 cases, but pain is of course a less reliable symptom than tumor or hematuria.

Epithelial tumors of the kidney pelvis are much less common than hypernephroma. In 1922 Smith and Gilbert collected from the literature 178 cases of tumors primary in the renal pelvis, and added one more. In these cases hematuria is the most prominent symptom, occurring in over 70% of the papillary group and in 50% of the non-papillary group. In the former group the tumors vary in malignancy from the benign papilloma to the papillomatous adenoma, from these tumors, because of their friability and their formation, fragments are likely to break off and become implanted along

the ureter and in the bladder. Consequently the entire ureter, as well as the kidney, should be removed. The non-papillary carcinomas of the renal pelvis involve the ureter only by extension, not by transplantation. Since they are less likely to bleed than the papillary tumors, they do not give symptoms so early, and are likely to have given rise to metastasis before they are discovered.

Embryonal neoplasms occurring in the kidney of infants are usually discovered because of the tumor which they produce in the flank. Hugh Young states that these tumors frequently originate from the retroperitoneal tissues about the kidney, involving the kidney in their growth. Their removal is indicated but recurrence is the rule.

Tumors of the ureter are rare. Jeanbrau in 1914 had collected only 30 cases of primary tumor of the ureter (H. H. Young). In the one case which I have seen the tumor arose just within the ureteral orifice and prevented the passage of a ureteral catheter. This was a highly malignant carcinoma which recurred in spite of the removal of the kidney, ureter and adjacent bladder wall.

Primary ureteral tumor may be suspected if the jet from the ureter is bloody and the urine drawn by the ureteral catheter from the renal pelvis is clear. The diagnosis may be made certain or practically so, by a ureterogram.

TUMORS OF THE BLADDER

A man of 45 was referred to me on March 30th, 1928 by Dr. F. C. Gunter because on several consecutive examinations of the urine numerous red blood cells were found in the sediment. The urine had never been grossly bloody nor had the patient noticed any symptoms except a slightly increased frequency of urination and a slight discomfort in the suprapubic region first felt 9 months ago. Cystoscopy showed a solid round pedunculated tumor, evidently malignant, rising from the roof of the bladder. At operation April 7th, the condition was found to be as it appeared through the cystoscope. A section of the bladder wall with the tumor rising from the center was excised with the diathermy knife. Pathological examination of the specimen removed showed it to be a squamous cell carcinoma of moderate malignancy. There was no evident involvement of the bladder wall.

This case illustrates the importance of careful urinalysis and of cystoscopic investigation when red blood cells are found. Blood in the urine is the one outstanding sign of bladder tumor, although sessile epitheliomas, covered by intact mucosa, may grow to an advanced stage without causing hematuria.

There are, according to Ewing's classification two common varieties of bladder tumor: (1) papilloma, which is fibrous, benign, or malignant; and (2) carcinoma. There are other rare forms, but they are clinically unimportant. Papillomas of the bladder vary in the degree of their malignancy. In a few cases, they remain benign for years. I have under my care such a case. In 1917

he was operated upon for tumor of the bladder. The growth recurred and when I saw him in 1925 the entire bladder wall was covered with large and small pedunculated tumors. The patient was anemic from loss of blood, and septic and uremic from infection of the bladder and kidneys. The bladder was opened, the larger tumors cut off with the diathermy knife and the entire surface of the bladder cavity thoroughly treated by electrocoagulation. After a long convalescence, during which the bladder was drained suprapubically, he healed up and regained his health. Since then his urine has become clear of infection and the few recurrences which have developed have been destroyed through the cystoscope.

All papillomas are potentially malignant. Buerger places the proportion of carcinomas preceded by papilloma at 30 to 36 per cent. It is not always possible to differentiate between the benign and the malignant papillomas by their cystoscopic appearance. Carcinomatous degeneration in a papilloma produces a more solid appearing tumor, with the individual fronds presenting rounded shiny tips instead of pale fringe-like ones. Areas of necrosis are indicative of malignancy. Whether the tumor is actually malignant or not makes little difference in its treatment. If it measures no more than 2 cm. in its greatest diameter, and has a small pedicle, it can probably be destroyed by electrocoagulation through the cystoscope. The modern apparatus for bipolar electrocoagulation is so efficient that tumors formerly believed too large to be treated by this method can now be successfully destroyed by a few treatments. After the tumor has been eradicated the patient should be cystoscoped at frequent intervals so that recurrences may be destroyed while still small. In some cases, fortunately a minority, malignant degeneration has already taken place in the base of the pedicle, so that in spite of thorough electrocoagulation the growth will recur as a definite sessile carcinoma. In spite of the possibility of this I am in favor of destroying moderate sized papillomas through the cystoscope instead of removing them by resection of the bladder wall. In my experience recurrence is just as likely to occur after excision as after electrocoagulation. It stands to reason that the earlier these tumors are discovered the better the prognosis.

If the papilloma has a thick pedicle or none at all the bladder should be opened and the growth destroyed by thorough electrocoagulation or by the implantation of seeds of radium. I prefer the former method because of the more rapid healing of the treated area. Radium burns may persist for over a year, with accompanying infection and possibly stone formation. Deep infiltration of the bladder wall, in my opinion is better treated by radiation than by electrocoagulation.

operations comprised drainage of peritonitis caused by perforation of the malignant disease or colostomy for complete obstruction. There were a few instances of entero colostomy or colocolostomy to sidetrack the growth and relieve obstruction. This large group of palliative operations included, as the very high mortality shows, mostly desperate cases in which operative relief was offered as a last resort. Most of these operations were done under novocain and no such operation was withheld if it offered any reasonable chance of temporary relief from an unsupportable condition. There were 74 radical resections with 12 deaths, giving a mortality rate of 16.2%. The 62 patients in this group who made an operative recovery left the hospital relieved of their symptoms and many, as in the two instances cited above, have lived many years and may be considered "cured." The final figures in the follow-up statistics of these patients are not as yet available.

From the point of view of those who are interested in the *American Society for the Control of Cancer, Inc.*, what interpretation may be

made of this brief review of the status of carcinoma of the gastro intestinal tract as regards its feasibility of cure? There can be but one answer that the disease is curable and that while we await the demonstration of the cause of cancer which will be followed in all probability by the discovery of a non-surgical method of cure, immense progress may be made in the efficiency of the surgical treatment through the education of both physician and layman. The latter must disabuse his mind of the gloomy conviction that cancer is hopeless, the former must be aroused to take action at the first warnings of the disease. The earliest symptoms of cancer wherever situated in the human body are trivial in character,—it follows then that all trivial symptoms unless they yield promptly to simple measures must be considered potentially as the first evidence of a terrible but curable disease and subjected to every available and proper diagnostic measure. The promotion of these objects by a campaign of education constitutes at present the most promising way of winning ground in the fight against cancer.

MALIGNANT DISEASE OF THE GENITO-URINARY TRACT

BY GEORGE GILBERT SMITH, M.D., F.A.C.S.*

TUMORS OF THE KIDNEY AND URETER

On March 14, 1925, J. W. C.—, a carpenter 68 years of age, was referred to me by Dr. E. M. Fuller of Bath, Maine. His sole complaint was hematuria. The first attack of this was in September, 1923. No more blood was seen for one year; he then bled again and had had several attacks since. Except for the difficulty which he experienced in passing clots of blood, he had no urinary symptoms. There had been no pain in the loins, no loss of weight or strength. On abdominal palpation the lower pole of the right kidney was easily felt, it was nodular, movable, and as large as a small orange. The left kidney was not palpable. The prostate was small and soft and there was no residual urine. The urine was hazy and showed a slightest possible trace of albumen, no sugar, 510 red blood cells and 2-4 leukocytes per field, one large clump of pus, and 3 granular casts. Cystoscopy showed a normal bladder. Both ureters were catheterized, a divided function showed 15% of phthalein from the left kidney and but 5% from the right. A right pyelogram showed a filling defect of the lower and middle calyces which was typical of renal tumor. On March 25, 1925 a right nephrectomy was done. The kidney tissue in its lower 2/3 was replaced by a hypernephroma.

Two years later the patient returned for examination. He felt well, was working regularly and showed on careful examination no evidence of recurrence.

In this case the presenting symptom was hematuria, a sign which always demands cystoscopic investigation. Hematuria usually brings the patient to his doctor post haste, but it is a sad fact that not infrequently the patient is

dismissed with "reassurances" and the promise to investigate "if the bleeding keeps on."

In the majority of cases of renal tumor hematuria is not the first symptom. In a study of 62 cases of hypernephroma occurring at the Massachusetts General Hospital Smith and Shoemaker found that only 27 of the 62 cases showed gross blood in the urine, the most consistent finding was that of tumor. An enlarged kidney was found in 48 cases, in some of which the patient himself had first noticed the mass. Every case of enlarged kidney should be regarded as suspicious, whether or not it is accompanied by hematuria, and should be subjected to cystoscopic study, for it is possible to have an advanced hypernephroma without hematuria or pain. Pain was noted in 32 of these 62 cases, but pain is of course a less reliable symptom than tumor or hematuria.

Epithelial tumors of the kidney pelvis are much less common than hypernephroma. In 1922 Smith and Gilbert collected from the literature 178 cases of tumors primary in the renal pelvis, and added one more. In these cases hematuria is the most prominent symptom, occurring in over 70% of the papillary group and in 50% of the non-papillary group. In the former group the tumors vary in malignancy from the benign papilloma to the papillomatous adenoma, from these tumors, because of their friability and their formation, fragments are likely to break off and become implanted along

*For record and address of author see *This Week's Issue* page 524.

of a malignant nature are due to fibrosis. I have never seen carcinoma originating in the shaft of the penis.

TUMOR OF THE TESTICLE

These tumors occur most commonly between the ages of 15 and 45. They are of the mixed type and are frequently teratoid in character, containing hair, bits of bone and suggestions of other embryonic structures. Metastases of a carcinomatous nature occur early and invade the lymph glands which lie along the iliac vessels and the aorta. Frequently metastases jump the nearest glands and lodge in the juxta aortic glands about the renal pedicle. Any enlargement of the testicle developing without known cause should be suspected to be a tumor. Barney has reported 2 cases of carcinoma which apparently started in the epididymis, simulating tuberculous epididymitis. Gumma of the testicle is the process most likely to be confused with tumor, consequently a Wassermann test is of diagnostic value. If there is the slightest suspicion of tumor of the testicle, the scrotum should be opened and the gland examined. Hinman advocates an extensive dissection of the area into which the lymphatics from the testis drain. This means the removal of all lymphatics and glands from the retroperitoneal space on the affected side, from the inguinal ring up to the renal vessels. While his opinion is not universally accepted, he has a higher record of cures than other operators who do a simple orchidectomy. Recurrences, if they do occur, are most likely to develop in the retroperitoneal glands of the upper abdomen. They are quite radiosensitive, and often respond well to radiation from radium or X-Ray. Dean reports excellent results from this method of treating such metastases.

CONCLUSIONS

Cancer of the genito-urinary tract is, generally speaking, a difficult type to treat. In many cases the disease is far advanced before it gives any sign which arouses the patient's anxiety. Abdominal tumor, hematuria, pyuria and disturbances of micturition are signs which call for immediate and thorough investigation if we would save the patient. Of these signs, hematuria is unquestionably the most important, both because of its frequency and because of the fear which it inspires. Lower, in a discussion of hematuria, summarizes the findings of a number of urologists, in a series of 100 cases of hematuria, Chute found 64 per cent to be due to new growths, Walther, in 74 cases, found 51 per cent to be due to tumors, Kretschmer, in 197 cases, in which the source and cause of the bleeding were determined, found new growths responsible for 50 per cent. Lower himself reports that in 798 cases in which blood was found in the urine, new growth was the cause in 32 per cent.

In this relation it is interesting and discouraging, to read what Colby has written concerning the histories of a series of cases with tumor of the bladder treated at the Peter Bent Brigham Hospital. These cases were divided into two five-year groups, 1916-1920 and 1921-1925. "It was found that in the first group the symptoms averaged 23.3 months' duration and in the second, 21.8 months. Little progress, then had been made in aiding this class of patient to an early and accurate diagnosis." Diagnostic methods in urology have now reached a high degree of perfection, competent urologists may be found in every medical center. Adequate measures for dealing with early growths have been developed, the responsibility for seeing that his patient gets the benefit from these achievements of medical science rests directly upon the general practitioner.

CANCER CASE HISTORIES*

BY ERNEST M. DALAND, M.D., F.A.C.S.

THE following are actual case histories from the clinics of the Collis P. Huntington Memorial Hospital and the Pondville Hospital at Norfolk. They are published with the idea of pointing out certain lessons which should be taught to patients and physicians. Obviously, all cases of cancer cannot be cured. However, it is an established fact that many early cases are curable provided certain standardized procedures are carried out.

From the Collis P. Huntington Memorial Hospital, Boston and the Pondville Hospital at Norfolk.

*For record and address of author see "This Week's Issue" page 524.

CANCER OF THE LIP

Mr. C., age 67, entered the Huntington Hospital outpatient department during cancer week, November 1922. He complained of a growth on his lower lip.

Present Illness—One year ago operation on his lip for a small growth. This recurred three months later and a second operation was done. Six weeks ago it again recurred.

Past History—Negative.

Local Examination—In the midline of the lower lip is a hard nodular new growth 1.5 cm. in diameter ulcerated on the surface. There are palpable glands in the left submaxillary region.

Clinical Diagnosis—Carcinoma of the lower lip.

Squamous cell carcinomas of the bladder are essentially infiltrating, and sometimes extend beneath the mucous membrane without causing ulceration. These tumors are highly malignant and may give rise to distant metastases. I remember one case in which a supraclavicular gland was invaded. In November 1926 I reported in this JOURNAL a case of squamous cell carcinoma of high malignancy, treated by radium implants through the open bladder, which was well 5 years after operation.

People seldom die of cancer of the bladder per se. As Chute has pointed out, death is usually due to involvement of the lower ureters, which causes suppression of the urine and infection of the kidneys. Distant metastases from papillary cancers are rather unusual (Ewing), "extensions occur through the wall of the bladder to the pelvic tissues, up the ureters toward the kidneys, along the pelvic lymphatics to the prevertebral lymph nodes."

The surgical treatment of tumor of the bladder must be thorough and must vary with the type of growth. A small proportion of cases are of such high malignancy that no treatment will avail, but the great majority, if discovered early, can be destroyed. Great responsibility rests upon the shoulders of those practitioners who see these patients first, it is only too common to find that precious months were wasted because "a doctor told him he had inflammation of the bladder and gave him medicine without relief" (Extract from the history of a case referred to above).

CANCER OF THE PROSTATE

Of all obstructing prostates, about 20% are malignant. Unfortunately for the patient, not a few cases of prostatic cancer develop to a point where radical operation cannot be undertaken before they give any symptom of importance. A little frequency, slight difficulty in voiding, may be the only symptoms. Such a case was that of B—T—, who 6 months before he came for examination had noted that urination was rather uncomfortable. He had no nocturia and only slight frequency at times. His urine was clear, showed no albumen, and contained only a rare leukocyte and red blood cell. There was practically no residuum. Yet he had a carcinoma of the prostate which had already broken through the capsule and involved the anterior bladder wall. Hematuria is usually a late symptom in prostatic cancer.

The diagnosis is easy, and within the reach of any physician who has ever felt a normal prostate. *The malignant prostate is hard.* Lowsley has pointed out that the cancer, in 80% of cases, begins in the posterior lobe—that portion of the prostate which lies between the veru montanum and the rectum. It is the part of the prostate which the finger first encounters as it enters the

rectum. It would be advisable for all men over 45 to have a rectal examination once a year. It is imperative that all men in this period of life should have a rectal examination if they complain of any bladder symptoms whatever. I do not say that all hard prostates are cancerous, some inflammatory prostates simulate malignancy. If the gland is not elastic and slightly movable, it should be examined by some one whose experience qualifies him to make a diagnosis.

The outlook in early carcinoma of the prostate is not too discouraging. The total perineal prostatectomy first described by H. H. Young, consisting of removal of prostate, vesicles and bladder neck, followed by suture of the bladder to the stump of the urethra, has given many satisfactory results. Usually control of urination has been kept, occasionally the patient is left incontinent, or partly so. Even when incontinence results, it is preferable to a suprapubic drainage tube.

In cases too far advanced for the total operation, a partial prostatectomy or removal of the obstructing bar by the punch operation or by excision through the cystoscope will stave off the less desirable suprapubic drainage. The treatment of these cases by implantation of radium has not, in my hands, been very satisfactory. It is a procedure which ought to be considered in some cases.

CARCINOMA OF THE PENIS

Epithelioma of the penis ought to be one of the most easily controlled of all cancers. The growth is generally slow to develop and late to metastasize. It is noticed by the patient himself while it is yet small, unless it develops beneath a phimosis. For this reason every prepuce which is not readily retracted should be circumcised. The areas of leucoplakia which develop from chronic balanitis are probably often the precursors of cancer. Early epitheliomas of the penis may be destroyed by electrocoagulation, in my experience the inguinal glands in such cases are almost never infected. When the growth has penetrated the fibrous layer which underlies the mucosa, partial amputation will usually suffice to remove the entire process. If, however, the cancer has involved the entire glans, or has penetrated the corpora cavernosa, total amputation with dissection of the inguinal regions is the only remedy. In such cases, the penis should be amputated close to the pubes, the scrotum and testicles should be removed, and the urethra implanted in the perineum.

Carcinoma of the urethra is a rare condition. It is usually mistaken for stricture associated with perurethritis, and is seldom diagnosed early enough to do a radical removal. The indurations which are felt in the corpora cavernosa and which are not infrequently thought to be

every three months for one year. She had no pain or other symptoms from her treatment. She was then lost sight of for about two years when she returned for examination. Examination in February 1926 showed nothing suggestive of disease. Patient is perfectly well and has no symptoms.

Comment—This patient is classed as a three-year cure. She may develop a recurrence but at present she is free from disease.

MELANOTIC SARCOMA OF CHEEK

Mrs C, age 64 entered the Collis P Huntington Hospital on March 16 1928 with a lesion on the right cheek.

Present Illness—For many years there has been a small smooth brown patch on her cheek. Two weeks ago she irritated it with her face cloth. Since then it has itched and become raised from the skin getting steadily larger.

Local Examination—In the center of the right cheek there is a raised brownish nodule 2 cm in diameter with a superficial scale. No palpable glands.

Clinical Diagnosis—Melanotic sarcoma.

Treatment—On March 17th operation was done with the electrocoagulation machine. A wall of coagulation was made in the healthy tissue around the tumor. With the cutting electrode this coagulated tissue was then cut through and the growth removed. The edges of the wound were sutured together loosely.

April 6—Healed.

Pathological Report—Melanotic sarcoma.

Outline of Further Treatment—Melanotic sarcoma metastasizes either to the lungs or to the glands. If the former has taken place there is no treatment which will help. There is no glandular enlargement now. Patient to be watched for glands and neck dissection if they appear.

Comment—This was a type of pigmented patch which lay dormant for years only to start a very rapid growth. Any mole or pigmented area which shows any tendency to become irritated or to change in character should be removed at once.

CANCER OF THE BREAST

Mrs M, age 61 entered the Pondville Hospital on July 2 1927 with recurrent carcinoma of the left breast.

Present Illness—In December 1925 she noticed pain in her left breast around the nipple. She consulted her physician in March 1926 and a diagnosis of cancer of the breast was made. She was sent to the hospital at once and a surgeon amputated the breast and dissected the lower axilla but did not remove the pectoral muscles. She was all right for six months when she noticed a mass in her left axilla. In November 1926 another surgeon removed this mass together with a portion of the muscles. There was no further trouble until February 1927 when a nodule appeared in the upper portion of the scar. In April this broke down and new nodules appeared in the scar. Since then she has been having severe pain.

Family History—No cancer in family.

Marital History—Husband and one child living.

Past History—No illnesses.

Physical Examination—Negative save for local examination.

Local Examination—Left breast has been amputated. Pectoral muscles have been partially removed with the contents of the axilla. There are four hard nodular recurrences, one freely movable one in the scar one deeply fixed at the apex of the axilla and two others lying directly below these two. These nodules vary from 3 to 5 cm in diameter. The right

breast is normal. No glands in the right axilla or above the clavicles. No suprasternal increase in dullness. *Diagnosis*—recurrent carcinoma of the breast.

Treatment—July 11 1927 Four 125 mg radium needles were inserted directly into the four nodules and left for 8 to 10 hrs.

July 18 1927 Five platinum implants each containing 23 mc radium emanation were inserted into the tumors.

August 15 1927 Five glass radium seeds.

August 30 1927 Eight gold radium seeds.

Sept 7 11 Deep X ray treatments.

Nov 7 1927 Readmitted. Marked diminution of all the nodules seen at admission but there are numerous other nodules needing treatment.

Nov 9 Ten gold radium seeds.

Nov 15 19 Deep X ray treatments.

Jan 8 1928 Readmitted. Marked edema of arm. Axilla filled with tumor tissue.

Jan 16 Twelve gold radium seeds.

Jan 23 27 Deep X ray treatments.

In August and again in January the X ray showed no lung metastases. X rays in January of all her long bones pelvis and spine showed no metastases. She returned home on February 4 and died on March 12. Immediate cause not known.

Comment—A type of carcinoma which never showed any tendency to metastasize outside of the local field. This type should be cured by radical operation—removal of the breast and overlying skin, the underlying fascia, the pectoral muscles and the axillary contents. In this case the radical operation was not done at the first operation. Secondary operations are rarely successful.

CANCER OF THE BREAST

Mrs O, age 58 entered the Huntington Hospital on P D on March 27 1928 with a lump in her left breast.

Present Illness—In May 1927 she noticed a lump in her breast. It did not pain her so she did not consult a doctor until one week ago. For the last few weeks there has been some discharge from the lump. She now has rheumatism in her left leg and in her back.

Past History—Negative.

Marital History—Husband and four children alive and well.

Family History—No cancer or tuberculosis.

Local Examination—There is an irregular mass occupying the whole left breast and spreading through the skin in the posterior axillary line on the left to the right margin of the right breast, involving all the skin between these points upward to the clavicle and downward to the costal margin. There is extensive glandular enlargement in both axillae none above clavicles.

Clinical Diagnosis—Carcinoma of breast (en cuirasse).

Plan of Treatment—When patient enters the hospital X rays of her chest spine and long bones are to be taken. Her rheumatism is suggestive of bone metastases. She will then be given deep X ray treatments.

Prognosis—Hopeless for cure. She may get rid of her discharge by treatment and her life may be somewhat prolonged.

Comment—This patient had never learned that the time to deal with a tumor of the breast is before it gives her pain. Ten months delay of course is fatal.

CANCER OF THE BREAST

Mrs T, age 46 entered the Huntington Hospital on December 31 1918 with a lump in her left breast.

Present Illness—She noticed a lump in her breast.

Operation advised Referred to the Mass General Hospital

Operation—M G H—December 4, 1922 A complete dissection was made of the submental and left submaxillary regions The growth on the lip was excised by a V shaped incision

Pathological Examination—Carcinoma of the lip No carcinoma found in the glands of the neck

Three Year Result—Patient writes—November 1925—that he has had no further trouble with his lip

Comment—Although the glands removed from the neck showed no cancer, dissection of the neck was justified because of the two local excisions and recurrences and because of palpable glands Experience shows that there is a larger percentage of cures in patients who have had the double operation in the lip and neck. Frequently we see patients in our clinics who have had lip operations without neck dissections The patients do not realize that their swollen glands are related to a lip lesion removed months or years before and they therefore delay until operation is out of the question

CANCER OF THE RECTUM

Mr P, age 51 entered the Pondville Hospital on March 24, 1928, with an inoperable carcinoma of the rectum

Present Illness—Onset October 1927 with obstipation, dysuria and abdominal cramps Some pain in rectum No blood in stools Patient went to a doctor shortly after onset and was told he had appendicitis He went to a second doctor who gave him stomach medicine and a tonic He then went to the Out Patient Department of a Boston hospital where he was put on a diet He made three visits to this hospital before he was seen by a doctor who found a growth in his rectum During all the time from October to February he did not have a rectal examination

He was sent to the ward and operated on A large, inoperable carcinoma was found at the rectosigmoidal junction A colostomy was made through the left rectus muscle As soon as he was able to leave the hospital he was sent to Pondville for radium

His chief complaints now are poor appetite indigestion a muco-purulent rectal discharge and nocturia four to five times He has lost fifty pounds in six months

Family History—No cancer in family

Marital History—Wife and two children living

Past History—No serious illnesses

Physical Examination—Patient is extremely emaciated and weak

Teeth carious and dirty

Heart—sounds normal Pulse rapid but regular Blood Pressure 110/70

Abdomen—Left rectus colostomy functioning well Liver and spleen not palpable Healed midline operative scar Transverse colon filled with semisolid feces and easily palpable

Inguinal glands enlarged

Rectal—Hard mass felt at the tip of the examining finger The proctoscope shows the rectum to be practically occluded There is infiltration of the anterior wall in the region of the prostate and the tumor cannot be removed

Outline of Treatment—

1—Regulation of bowels to insure proper functioning of colostomy

2—Cod liver oil to improve general condition until it is possible to move patient out in sunshine daily

3—Deep X ray treatment to pelvis

4—Implantation of radium into rectal growth under spinal or sacral anesthesia

Prognosis—For cure, hopeless For relief, slight

Comment—This man's chances of cure from cancer were lost by the negligence of three physicians to make a careful rectal examination.

CANCER OF THE CERVIX

Mrs B, age 68, entered the Collis P Huntington Hospital on March 15 1928 She had been seen by a surgeon who stated that she had an inoperable carcinoma of the cervix

Present Illness—One year ago she began to have a bloody vaginal discharge She had no pain until December 1927 when she sent for her physician He referred her to a surgeon who in turn refers her for radium treatment

Past History—Negative

Marital History—Married One child

Family History—Father died of carcinoma of the liver No tuberculosis in family

Local Examination—Vaginal examination shows a contracted vagina with carcinomatous infiltration of the anterior and posterior walls Ether examination was advised and done on March 17 Examination at this time showed an extensive infiltrated tumor of the anterior and posterior vaginal walls nearly obliterating the vagina There is a large crater replacing the cervix It is about 1½" in diameter By rectum the rectal vaginal septum is infiltrated The uterocervical segment is firmly fixed on both sides Diagnosis of very extensive carcinoma of the cervix was made Radium was given with the idea of stopping the bleeding but without any hope of cure

Radium Treatment—537 mcs in 2 mm. lead cylinder was packed into the crater replacing cervix Eight gold 'seeds' of 1½ mcs each inserted into the anterior and posterior vaginal walls

Pathological Report—Squamous cell carcinoma High malignancy

Prognosis—Very bad Patient is very likely to develop fistulae into the bladder and rectum Duration of life—six to eight months

Comment—It has been shown in this clinic that in early cases each month of delay reduces the patient's chances of cure 16%

CANCER OF THE CERVIX

Mrs D, age 50 was admitted to the Huntington Hospital on February 15 1923 complaining of vaginal bleeding irregularly for one year

Present Illness—She had her menopause five years ago and had no bleeding for four years One year ago she noticed a white discharge which later became bloody Her physician has been giving her antisiphilitic treatment for several months but had finally suspected cancer in addition to syphilis He removed a specimen which was reported to be cancer and referred her for treatment

Marital History—Married Four children alive and well The last three children have all died in infancy

Local Examination—Under ether There is an ulceration at the apex of the vagina which has destroyed the posterior lip of the cervix and which extends into the uterine cavity The posterior vaginal wall is involved in an ulcerated mass Diagnosis—carcinoma of cervix involving vaginal wall—proven by pathological examination

Radium Treatment—Under ether Three steel tubes containing 310 mcs of radium were inserted into the cervical canal and left for eight hours. Seven glass 'seeds' containing from 1½ to 2½ mc

Further Notes—Patient reported for examination were inserted in the periphery of the cervix and left indefinitely

every three months for one year. She had no pain or other symptoms from her treatment. She was then lost sight of for about two years when she returned for examination. Examination in February 1926 showed nothing suggestive of disease. Patient is perfectly well and has no symptoms.

Comment—This patient is classed as a three-year cure. She may develop a recurrence but at present she is free from disease.

MELANOTIC SARCOMA OF CHEEK

Mrs. C., age 64 entered the Collis P. Huntington Hospital on March 16, 1928 with a lesion on the right cheek.

Present Illness—For many years there has been a small smooth brown patch on her cheek. Two weeks ago she irritated it with her face cloth. Since then it has itched and become raised from the skin getting steadily larger.

Local Examination—In the center of the right cheek there is a raised brownish nodule, 2 cm in diameter with a superficial scale. No palpable glands.

Clinical Diagnosis—Melanotic sarcoma.

Treatment—On March 17th operation was done with the electrocoagulation machine. A wall of coagulation was made in the healthy tissue around the tumor. With the cutting electrode this coagulated tissue was then cut through and the growth removed. The edges of the wound were sutured together loosely.

April 6—Healed.

Pathological Report—Melanotic sarcoma.

Outline of Further Treatment—Melanotic sarcoma metastasizes either to the lungs or to the glands. If the former has taken place, there is no treatment which will help. There is no glandular enlargement now. Patient to be watched for glands and neck dissection if they appear.

Comment—This was a type of pigmented patch which lay dormant for years only to start a very rapid growth. Any mole or pigmented area which shows any tendency to become irritated or to change in character should be removed at once.

CANCER OF THE BREAST

Mrs. M., age 61 entered the Pondville Hospital on July 2, 1927 with recurrent carcinoma of the left breast.

Present Illness—In December 1925 she noticed pain in her left breast around the nipple. She consulted her physician in March 1926, and a diagnosis of cancer of the breast was made. She was sent to the hospital at once and a surgeon amputated the breast and dissected the lower axilla but did not remove the pectoral muscles. She was all right for six months when she noticed a mass in her left axilla. In November 1926 another surgeon removed this mass together with a portion of the muscles. There was no further trouble until February 1927 when a nodule appeared in the upper portion of the scar. In April this broke down and new nodules appeared in the scar. Since then she has been having severe pain.

Family History—No cancer in family.

Marital History—Husband and one child living.

Past History—No illnesses.

Physical Examination—Negative save for local examination.

Local Examination—Left breast has been amputated. Pectoral muscles have been partially removed with the contents of the axilla. There are four hard nodular recurrences, one freely movable one in the scar, one deeply fixed at the apex of the axilla and two others lying directly below these two. These nodules vary from 3 to 5 cm in diameter. The right

breast is normal. No glands in the right axilla or above the clavicles. No suprasternal increase in dullness. *Diagnosis*—recurrent carcinoma of the breast.

Treatment—July 11, 1927. Four 125 mg radium needles were inserted directly into the four nodules and left for 8 to 10 hrs.

July 18, 1927. Five platinum implants each containing 23 mc radium emanation were inserted into the tumors.

August 15, 1927. Five glass radium seeds.

August 30, 1927. Eight gold radium seeds.

Sept 7, 1927. Deep X-ray treatments.

Nov 7, 1927. Readmitted. Marked diminution of all the nodules seen at admission but there are numerous other nodules needing treatment.

Nov 9. Ten gold radium seeds.

Nov 15, 1927. Deep X-ray treatments.

Jan 8, 1928. Readmitted. Marked edema of arm. Axilla filled with tumor tissue.

Jan 16. Twelve gold radium seeds.

Jan 23, 1928. Deep X-ray treatments.

In August and again in January the X-ray showed no lung metastases. X-rays in January of all her long bones, pelvis and spine showed no metastases. She returned home on February 4 and died on March 12. Immediate cause not known.

Comment—A type of carcinoma which never showed any tendency to metastasize outside of the local field. This type should be cured by radical operation—removal of the breast and overlying skin, the underlying fascia, the pectoral muscles and the axillary contents. In this case the radical operation was not done at the first operation. Secondary operations are rarely successful.

CANCER OF THE BREAST

Mrs. O., age 58 entered the Huntington Hospital on P. D. on March 27, 1928 with a lump in her left breast.

Present Illness—In May 1927 she noticed a lump in her breast. It did not pain her so she did not consult a doctor until one week ago. For the last few weeks there has been some discharge from the lump. She now has rheumatism in her left leg and in her back.

Past History—Negative.

Marital History—Husband and four children alive and well.

Family History—No cancer or tuberculosis.

Local Examination—There is an irregular mass occupying the whole left breast and spreading through the skin in the posterior axillary line on the left to the right margin of the right breast, involving all the skin between these points upward to the clavicle and downward to the costal margin. There is extensive glandular enlargement in both axillae, none above clavicles.

Clinical Diagnosis—Carcinoma of breast (en cuirasse).

Plan of Treatment—When patient enters the hospital X-rays of her chest, spine, and long bones are to be taken. Her rheumatism is suggestive of bone metastases. She will then be given deep X-ray treatments.

Prognosis—Hopeless for cure. She may get rid of her discharge by treatment and her life may be somewhat prolonged.

Comment—This patient had never learned that the time to deal with a tumor of the breast is before it gives her pain. Ten months delay of course is fatal.

CANCER OF THE BREAST

Mrs. T., age 46 entered the Huntington Hospital on December 31, 1918 with a lump in her left breast.

Present Illness—She noticed a lump in her breast

ten days ago She consulted an osteopath who advised operation

Past History—Abscess of breast opened four years ago The present lump is at the site of the old operation

Marital History—Husband and two children living and well

Family History—No cancer or tuberculosis

Local Examination—Both breasts are large Right nipple normal Pressure on left breast causes the nipple to retract Above the left nipple there is a deeply situated hard new growth 2 cm in diameter There is a suspicion of pigskin No adherence to the muscle No glands in axillae or above clavicles No

discharge from nipple Diagnosis—carcinoma of breast. Operation advised

Operation—January 6, 1919 The left breast with the pectoral muscles, the skin over the breast and the fascia beneath the breast and the contents of the axilla except the axillary vein were removed The skin flaps were completely closed

Pathological Examination—Carcinoma of the breast No cancer in the glands

January 6, 1925—Patient writes that she is free from disease It is six years since operation

Comment—There was no delay in this case Axillary glands were not palpable and were not microscopically abnormal Prognosis for complete cure excellent

THE WEEK'S CANCER PROGRAM AND THE OPENING EXERCISES IN SYMPHONY HALL, MONDAY, APRIL 23

THE State-wide campaign for the control of cancer was inaugurated April 23 to extend through the 27th The first exercise was a luncheon at the Hotel Statler for the professional group at which Dr William A Evans of Chicago was an especial guest

The first general meeting open to the public was in Symphony Hall on the evening of the 23rd The program follows

Organ Prelude Mr Clair Leonard

Introduction and Allegro
Handel's concerto No 10

Music Led by Mr Russell Cook

America the Beautiful
(By the audience)

Presiding—Robert B Greenough, M D
Regional Director American Society for the Control of Cancer

Introductory Remarks Governor Alvan T Fuller
Mayor Malcolm E Nichols
Rev Father George P O'Connor
(representing Cardinal O'Connell)

Address 'Cancer Control' William A. Evans, M D
Professor of Public Health Northwestern University,
Formerly Health Commissioner of Chicago

Address "Social Problems of Cancer"

Richard C Cabot, M D

Professor of Social Ethics Harvard University

Motion Picture 'A Fortunate Accident'

Organ Postlude Mr Clair Leonard
Toccata in F
Widor's Sixth Symphony

In introducing His Excellency Governor Fuller, who was the first speaker, Dr R B Greenough said

Ladies and Gentlemen This is the first exercise of a State-wide campaign to diminish the number of unnecessary deaths from cancer, and it is supported by the Government, the State Legislature acting chiefly through the State Department of Health, by the organized medical profession as represented by the Massachusetts Medical Society and by the public itself as represented by that organization of laymen and physicians which has done so much to disseminate

knowledge of this disease, the American Society for the Control of Cancer, as represented by its Massachusetts Branch While these organizations are primarily the sponsors for this campaign, the Catholic Church, the Protestant churches, the Jewish churches, the hospitals, the innumerable social agencies which know so well the need for public education on health matters, the daily press, the radio broadcasting agencies, and individuals and organizations which have contributed time, money and energy to the success of this campaign, and most notably those distinguished representatives of our State and City government, the eminent representative of the Roman Catholic Church and these nationally renowned authorities on medical and social science have generously come to our help in this emergency

It gives me great pleasure to introduce to you a statesman who by his courage, his honesty and his intelligence has honored the exalted position of Governor of the Commonwealth of Massachusetts as much as that position has honored him—Governor Fuller (applause—all stand)

Governor Alvan T Fuller spoke as follows
Doctor Greenough, the Mayor of Boston, Father O'Connor and fellow citizens

Ten months ago we met to open a Massachusetts State hospital at Norfolk for treatment of patients in all stages of cancer That hospital is giving excellent service and turning three patients back into the community relieved for every one that dies At that time it was pointed out that the State hospital's service would always be largely alleviative and that we must look to the doctors and the clinics to decrease our dreadful death rate from this disease The State aided clinics served 1300 persons last year, and since then new clinics have been opened so that at present twelve cities hold regularly such cancer clinics and others will soon be added This year as many as ten thousand persons should visit them

Thus it is particularly suitable that organized government, the organized public and the organized profession should unite in a cancer campaign

paign These great forces are represented by the State Department of Public Health, the American Society for the Control of Cancer, and the Massachusetts Medical Society, and they call on all of us adults as good citizens to co-operate

I am told that one in every ten adults now living in the United States is doomed to cancer, that the disease claims as its victim one in every eight men between the ages of 55 and 70 and one in every five women between the ages of 45 and 65. The world has never known a more ravaging disease than cancer, and the toll that it takes is increasing every year.

The mere fact that cancer is a disagreeable subject to talk about should not keep us from giving it intelligent consideration which will make for curbing its ravages. Massachusetts is the first State in the Union to have a cancer hospital and to establish cancer clinics paid for out of public funds. The object of this meeting is to see that these facilities are utilized by those afflicted with cancer in the early stages. Therefore one of the primary objects of these meetings, which are being held throughout the State under the direction of the Department of Public Health, is to educate the public to the first indications of possible cancer in the hope that they will go to one of these State clinics and there receive expert advice free.

There is something very insidious about cancer. I hesitate to make a personal observation, but from early youth it to me has been one of the most dread diseases, and I have observed that people are very reluctant, even when they have some ailment that might possibly be cancer or a start of it, to have a diagnosis of their trouble made. They seem to feel that there is a stigma attached to having this disease and a good many people, it would appear, are secretive in regard to symptoms that even remotely suggest the possibility of cancer. I have known of cases where people have hesitated to have an examination made for fear that a proper diagnosis of their case would indicate that they had cancer. Apparently there are those in the community who hesitate to bravely face a diagnosis as some people dread to contemplate the making of a will. This is very unfortunate. It is a great mistake. I think that doctors will agree that if this unintelligent way of doing things could be cleared up, it would be a great help. Cancer is bad enough without having the people afflicted with it conspire with the dread disease itself to aid in its progress.

I have been told that ninety per cent of the cases of cancer of the skin are curable. It is well to keep in mind that cancer is not hereditary, it is not contagious, it is not infectious. I am very sure that the people of Massachusetts, as they become familiar with the data, facts, and statistics that have to do with cancer, will take pride in the fact that Massachusetts is in advance of the other States in the Union in preparing to restrict the inroads of this disease.

But the point we want to drive home is this: We have not really accomplished anything—or a great deal at any rate—until we disseminate the information that will lead people when in doubt or with the slightest suspicion that they have an infection that might develop into cancer, to take advantage of the clinics or the hospital. The clinics are located in the various cities and the cancer hospital is at Norfolk.

I am very sure that Dr. Bigelow will be glad to have any suggestions that might occur to you in connection with this cancer campaign. The State work in this connection is new, it is pioneering work and the best ways are not charted, and therefore if the public can offer any suggestions that will help, I am sure they will be very acceptable.

I call on you then at the opening of this carefully organized cancer campaign, to make full use of the lavishly free opportunities to inform yourselves regarding the proper use of the resources for cancer control to the end that each of you may contribute his share toward what will perhaps be one of the greatest monuments to a free, educated people, the reduction of the present dreadful toll of cancer deaths.

In introducing Mayor Nichols Dr. Greenough said: The City of Boston like the Commonwealth honors us by the presence of its chief executive. He has shown by his conduct of municipal affairs especially in the health department under Dr. Mahoney the desire to procure a healthy as well as an educated and an orderly and happy community. I introduce Mayor Nichols (applause, all stand).

Mayor Nichols: It is fitting that the city of Boston be represented on the program this evening. For many years Boston has been one of the prominent medical centers of the country and is now developing into what may soon be the leading one. The medical profession of Boston has always been interested in cancer, and this interest was intensified in 1901 when the Cancer Commission of Harvard University was established. From that time to the present various forms of research work have been conducted and the reports from the Huntington Memorial Hospital are valued throughout the Scientific world.

At the present time there are many agencies and institutions in Boston that are dealing with various phases of the cancer problem. It would be impossible to name them all, but reference of them seems pertinent.

The Huntington Memorial Hospital in addition to doing research work makes diagnoses and treats a large number of cancer patients. There are a few beds here for patients needing house care.

For many years the Palmer Memorial Hospital has cared for cancer patients. Within the past year this hospital has increased its number of beds by building a new hospital. Here the

most approved service is available for all type of cancer cases

The Good Samaritan Hospital furnishes nursing care for terminal cancer cases among women

The Massachusetts General Hospital has opened a tumor clinic for the diagnosis of malignant disease

The Boston Dispensary conducts a cancer clinic and furnishes radium and X ray treatment for those needing it

The Boston City Hospital and the Long Island Hospital furnish care and treatment for cancer cases

The Boston Health Department is cooperating with the State Health Department in its program of Cancer Control

The Community Health Association is furnishing nursing care to many cancer cases

During the past year an extensive survey has been made to determine what the needs are in Boston for the chronic sick

The above items list only a few of the services available for cancer patients. There are probably few cities in the country which have taken the interest in cancer to the same degree as has Boston

But to have these and other resources available is not enough! They must be used. To this end the cancer campaign is devoted, and to this end the public must avail themselves of the unprecedented resources for informing themselves regarding the control of cancer

In presenting Father O'Connor, who represented Cardinal O'Connell, Dr. Greenough said: One of the most staunch supporters of any movement to increase the health and happiness of mankind is the Roman Catholic Church, and in the health education and especially in regard to cancer Catholic institutions, hospitals and churches have been freely open to the dissemination of knowledge in regard to this disease. The Holy Ghost Hospital in Cambridge is one of the first hospitals established in the State especially for advanced cases of cancer. The Daughters of Isabella have aided in no slight degree in the education of the public in regard to this disease.

His Eminence, Cardinal O'Connell, was unavoidably prevented from attending this meeting but he sends a worthy representative in the person of Father George P. O'Connor with a message which will be of interest to you—Father O'Connor (Applause)

Father O'Connor said: Distinguished Ladies and Gentlemen. It is with great regret that I announce the inability of Cardinal O'Connell to be here tonight. He directs me to express to Dr. Greenough and to all the gentlemen who are interested in this great campaign of cancer control in Massachusetts, to express to them his deep and abiding interest in all they are endeavoring to do. In his administration of our many large institutions Cardinal O'Connell has come in contact with every phase of cancer and there-

fore he is most anxious to do everything that is possible to alleviate the suffering that it causes

Now, Ladies and Gentlemen, mere sympathy though it comes from the finest personal motives will never bring emancipation from this dread disease. We need sound thinking, we need courage, scientific methods, intelligent cooperation, if we are to emancipate the people in this part of the world from that dread scourge. And the coming together of the public and private agencies with a real program for the development of successful effort against this disease is one of the finest and greatest movements that has taken place in this State for many a day.

Now the Catholic Church, which I have the honor to represent tonight, offers an unfaltering loyalty to this program in behalf of cancer control. She sends forth her people as an exemplification of the Christian law which makes the strong go forth to seek their sanctification or holiness in the service of the weak, and a better understanding in the community of the law of Christian charity or Christian brotherhood will do more in giving a source of strength to any movement of this kind that is for the welfare of humanity.

There is a trend at the present time toward larger associations, toward mutual discussion on the part of those who are doing the same sort of work. There is a cooperation today amongst agencies that are interested in like pursuits, and this will bring forth a great stimulation. This will surely bring success because it is in this mutual discussion and this fine cooperation that anything worth while will be accomplished. Isolation of any group in a community always impedes progress because that group will offset some of the great efforts that are being made for the benefit of the community as a whole.

We understand from the past war what cooperation meant—how it developed great efficiency, how this nation went forth in an almost irresistible manner because everyone worked together in order to accomplish the great result that was at hand. I think we might pledge ourselves here tonight in a personal way in behalf of the thousands of men and women who are suffering now and who will suffer in the future from the disease, cancer.

Some years ago a gentleman gave a million dollars to an institution that was built for the benefit of wayward boys. At the dedication of a building erected to his generosity he gave an address and in his address he said that this institution was worth a great deal of time or rather that it cost a great deal of time and labor and money, but, he said, it is worth all the time and labor and money spent if it saves one boy. Afterward a friend of his said, "Didn't you make that a little strong?—that this institution is worth all the time and money and labor if it saves only one boy?" and he said, "Oh, no, I didn't make it too strong. This institution is

worth all the time and labor and money spent if the only boy saved were my boy." And Ladies and Gentlemen, in the great work against cancer let us take a personal interest let us think of each one of the thousands who are afflicted with this dread disease. Let us by this personal interest go forth as an irresistible force in overcoming this dread disease. Let us help to rob it of the terrors with which it has afflicted our community. It will mean something for us as American citizens because I think it is fine always to think of American citizenship as a citizenship which always shows true charity and a great interest in the less fortunate of our fellow men. And we pledge ourselves tonight with a sacred and sincere loyalty that our blessed country may renew admiration among the nations of the earth because she is now as she always has been a representative of active Christian work in the service of mankind (Applause)

Introducing Dr. Evans Dr. Greenough said Ladies and Gentlemen. There are few physicians in this country or in the world whose names are so widely known whose advice is so widely followed, and whose influence for the betterment of the race is as great as that of Dr. William A. Evans of Chicago. He contributes those daily health talks that are read in the daily press from Massachusetts to California and from Maine to Florida. I suspect that Dr. Evans is in reality not just one superman but 20 at least but in any case he is a distinguished professor of public health in Northwestern University in Chicago, and he or they have come all the way from Chicago to talk to you tonight.—Dr. Evans (applause)

Dr. William A. Evans, Chicago, said Mr. Chairman, your Reverence, your Honor, Dr. Greenough, Ladies and Gentlemen. I am very happy to be here tonight. We have done nothing practically nothing for the control of cancer in Illinois certainly we have done nothing worth while in a collective way. I am very anxious that the story that I take back to my people will be of some service in interesting them and I hope the time will come—and that not far away—when we in Illinois will inaugurate a campaign fashioned after your campaign and with the same objective. It will not be the first time. It is not often that men and women gather together under circumstances such as these. I have been present at the launching of more than one health campaign of one sort or another in more than one State of the Union, but I do not recall an occasion when the Governor of the State, the Mayor of the City and the ranking officer of the Catholic Church were represented or in person on the platform giving sanction and approval to that which was being undertaken. Nor is it usual, in fact I do not remember ever to have been present in the very inauguration or beginning of a campaign in which

there was such a large representation of the general public as we have here tonight.

You understand that this thing has not the force of years. It isn't a going concern. Less than two years of age in your own community, and with no background of experience in surrounding communities, you are participating in the birth of the thing. There is a degree of enthusiasm and interest in the people here that is unusual in the beginning of anything. Your city has the reputation of some degree of aloofness. If I reason this thing aright I am bound to arrive at one or two conclusions—either you have a larger measure of human sympathy in the men and women who go down under cancer than is present in other communities or than is manifest in other communities, or else you have a vision and imagination and capacity to foresee the future that does not prevail in other communities and perhaps there is in the interest that you manifest a mixture of these two motives.

We have just had two very good medical talks, one by the Governor and one by the Mayor. They made such excellent medical addresses that I believe I am released from obligation to talk like a doctor and they have earned for me the privilege of talking like a plain citizen, like a layman, like one of you.

This campaign is a conflict with a disease against which men have mixed emotions. There are those here and there are more who are not here who are dubious as to the advisability of undertaking a cancer control campaign. And this doubt relates to two groups, one, the individual or from the standpoint of the individual, and the other from the collective or community standpoint. I am going to call your attention to a certain similarity between cancer and consumption, a similarity between these diseases as they relate themselves to individuals and as they relate themselves to communities. I am going to ask you to walk with me down the paths which men have traveled in reaching the point where they now are with relation to consumption. I am going to measure that with which you hope to have experience by the measure of the experience that you have had. I am going to ask you to determine what will be your attitude toward cancer on the basis of your experience individually and collectively with consumption. There are those who hesitate to have attention drawn to cancer because of the unpleasantness of it because of the sorrow that the word denotes because of the unhappiness that has been brought into the lives of men. It is one of those disagreeable things that superficial thought and superficial thinking would have us avoid. I want to call your attention to the fact that from the standpoint of the individual this was just our attitude toward consumption 25 or 30 or 40 years ago. We dreaded to tell a man that he had consumption for it meant nothing but sorrow and hopelessness. But that which I want

most approved service is available for all type of cancer cases

The Good Samaritan Hospital furnishes nursing care for terminal cancer cases among women

The Massachusetts General Hospital has opened a tumor clinic for the diagnosis of malignant disease

The Boston Dispensary conducts a cancer clinic and furnishes radium and X-ray treatment for those needing it

The Boston City Hospital and the Long Island Hospital furnish care and treatment for cancer cases

The Boston Health Department is cooperating with the State Health Department in its program of Cancer Control

The Community Health Association is furnishing nursing care to many cancer cases

During the past year an extensive survey has been made to determine what the needs are in Boston for the chronic sick

The above items list only a few of the services available for cancer patients. There are probably few cities in the country which have taken the interest in cancer to the same degree as has Boston

But to have these and other resources available is not enough! They must be used. To this end the cancer campaign is devoted, and to this end the public must avail themselves of the unprecedented resources for informing themselves regarding the control of cancer

In presenting Father O'Connor, who represented Cardinal O'Connell, Dr. Greenough said: One of the most staunch supporters of any movement to increase the health and happiness of mankind is the Roman Catholic Church, and in the health education and especially in regard to cancer Catholic institutions, hospitals and churches have been freely open to the dissemination of knowledge in regard to this disease. The Holy Ghost Hospital in Cambridge is one of the first hospitals established in the State especially for advanced cases of cancer. The Daughters of Isabella have aided in no slight degree in the education of the public in regard to this disease.

His Eminence, Cardinal O'Connell, was unavoidably prevented from attending this meeting but he sends a worthy representative in the person of Father George P. O'Connor with a message which will be of interest to you—Father O'Connor (Applause)

Father O'Connor said: Distinguished Ladies and Gentlemen. It is with great regret that I announce the inability of Cardinal O'Connell to be here tonight. He directs me to express to Dr. Greenough and to all the gentlemen who are interested in this great campaign of cancer control in Massachusetts, to express to them his deep and abiding interest in all they are endeavoring to do. In his administration of our many large institutions Cardinal O'Connell has come in contact with every phase of cancer and there-

fore he is most anxious to do everything that is possible to alleviate the suffering that it causes

Now, Ladies and Gentlemen, mere sympathy though it comes from the finest personal motives will never bring emancipation from this dread disease. We need sound thinking, we need courage, scientific methods, intelligent cooperation, if we are to emancipate the people in this part of the world from that dread scourge. And the coming together of the public and private agencies with a real program for the development of successful effort against this disease is one of the finest and greatest movements that has taken place in this State for many a day.

Now the Catholic Church, which I have the honor to represent tonight, offers an unflinching loyalty to this program in behalf of cancer control. She sends forth her people as an exemplification of the Christian law which makes the strong go forth to seek their sanctification or holiness in the service of the weak, and a better understanding in the community of the law of Christian charity or Christian brotherhood will do more in giving a source of strength to any movement of this kind that is for the welfare of humanity.

There is a trend at the present time toward larger associations, toward mutual discussion on the part of those who are doing the same sort of work. There is a cooperation today amongst agencies that are interested in like pursuits, and this will bring forth a great stimulation. This will surely bring success because it is in this mutual discussion and this fine cooperation that anything worth while will be accomplished. Isolation of any group in a community always impedes progress because that group will offset some of the great efforts that are being made for the benefit of the community as a whole.

We understand from the past war what cooperation meant—how it developed great efficiency, how this nation went forth in an almost irresistible manner because everyone worked together in order to accomplish the great result that was at hand. I think we might pledge ourselves here tonight in a personal way in behalf of the thousands of men and women who are suffering now and who will suffer in the future from the disease, cancer.

Some years ago a gentleman gave a million dollars to an institution that was built for the benefit of wayward boys. At the dedication of a building erected, to his generosity he gave an address and in his address he said that this institution was worth a great deal of time or rather that it cost a great deal of time and labor and money, but, he said, it is worth all the time and labor and money spent if it saves one boy. Afterward a friend of his said, "Didn't you make that a little strong?—that this institution is worth all the time and money and labor if it saves only one boy?" and he said, "Oh, no, I didn't make it too strong. This institution is

worth all the time and labor and money spent if the only boy saved were my boy." And Ladies and Gentlemen, in the great work against cancer let us take a personal interest, let us think of each one of the thousands who are afflicted with this dread disease. Let us by this personal interest go forth as an irresistible force in overcoming this dread disease. Let us help to rob it of the terrors with which it has afflicted our community. It will mean something for us as American citizens because I think it is fine always to think of American citizenship as a citizenship which always shows true charity and a great interest in the less fortunate of our fellow men. And we pledge ourselves tonight with a sacred and sincere loyalty that our blessed country may renew admiration among the nations of the earth because she is now as she always has been, a representative of active Christian work in the service of mankind. (Applause)

Introducing Dr. Evans, Dr. Greenough said: Ladies and Gentlemen, There are few physicians in this country or in the world whose names are so widely known, whose advice is so widely followed and whose influence for the betterment of the race is as great as that of Dr. William A. Evans of Chicago. He contributes those daily health talks that are read in the daily press from Massachusetts to California and from Maine to Florida. I suspect that Dr. Evans is in reality not just one superman but 20 at least, but in any case he is a distinguished professor of public health in Northwestern University in Chicago, and he or they have come all the way from Chicago to talk to you tonight.—Dr. Evans (applause)

Dr. William A. Evans, Chicago, said: Mr. Chairman, your Reverence, your Honor, Dr. Greenough, Ladies and Gentlemen, I am very happy to be here tonight. We have done nothing, practically nothing, for the control of cancer in Illinois, certainly we have done nothing worth while in a collective way. I am very anxious that the story that I take back to my people will be of some service in interesting them and I hope the time will come—and that not far away—when we in Illinois will inaugurate a campaign fashioned after your campaign and with the same objective. It will not be the first time. It is not often that men and women gather together under circumstances such as these. I have been present at the launching of more than one health campaign of one sort or another in more than one State of the Union, but I do not recall an occasion when the Governor of the State, the Mayor of the City and the ranking officer of the Catholic Church were represented or in person on the platform, giving sanction and approval to that which was being undertaken. Nor is it usual, in fact I do not remember ever to have been present in the very inauguration or beginning of a campaign in which

there was such a large representation of the general public as we have here tonight.

You understand that this thing has not the force of years. It isn't a going concern. Less than two years of age in your own community, and with no background of experience in surrounding communities you are participating in the birth of the thing. There is a degree of enthusiasm and interest in the people here that is unusual in the beginning of anything. Your city has the reputation of some degree of aloofness. If I reason this thing aright I am bound to arrive at one or two conclusions—either you have a larger measure of human sympathy in the men and women who go down under cancer than is present in other communities or than is manifest in other communities or else you have a vision and imagination and capacity to foresee the future that does not prevail in other communities and perhaps there is in the interest that you manifest a mixture of these two motives.

We have just had two very good medical talks, one by the Governor and one by the Mayor. They made such excellent medical addresses that I believe I am released from obligation to talk like a doctor and they have earned for me the privilege of talking like a plain citizen, like a layman, like one of you.

This campaign is a conflict with a disease against which men have mixed emotions. There are those here and there are more who are not here who are dubious as to the advisability of undertaking a cancer control campaign. And this doubt relates to two groups: one, the individual or from the standpoint of the individual, and the other from the collective or community standpoint. I am going to call your attention to a certain similarity between cancer and consumption, a similarity between these diseases as they relate themselves to individuals and as they relate themselves to communities. I am going to ask you to walk with me down the paths which men have traveled in reaching the point where they now are with relation to consumption. I am going to measure that with which you hope to have experience by the measure of the experience that you have had. I am going to ask you to determine what will be your attitude toward cancer on the basis of your experience individually and collectively with consumption. There are those who hesitate to have attention drawn to cancer because of the unpleasantness of it, because of the sorrow that the word denotes because of the unhappiness that has been brought into the lives of men. It is one of those disagreeable things that superficial thought and superficial thinking would have us avoid. I want to call your attention to the fact that from the standpoint of the individual this was just our attitude toward consumption 25 or 30 or 40 years ago. We dreaded to tell a man that he had consumption for it meant nothing but sorrow and hopelessness. But that which I want

you to take cognizance of is that a policy of frankness, openness and honesty, has worked to benefit mankind. Individuals who now have consumption have a better opportunity to escape the thralldom of that disease by reason of the fact that consumption is no longer avoided as a thief, that it is spoken of honestly, and diagnoses of consumption are honestly given and honestly received, that the policy of secrecy and evasion, of covering up, has given place to the policy of plainer speaking, and this has worked to the advantage of the individual who has consumption. He is better informed, he is more alert, he better understands the meanings of certain things that point the way than he ever would have been under the old policy, and an indirect working of that policy has been the hope that has been substituted for hopelessness, that something has taken the place of despair that once prevailed.

And again with respect to the community—why is the community interested in the policy of cancer control? It has become one of our most important diseases. It is one of the larger problems of departments of health. If those departments of health are to protect their communities against preventable disease, they cannot logically escape the obligation to do something for the control of cancer. Statistically and in all other ways it represents one of their larger and more important problems, and the only question is—Shall they frankly face conditions as they are, or shall they shy off and leave to another or to another day the solution of this exceedingly trying and difficult problem? There are those who would have men leave for the morrow campaigns against cancer, and they belong in several groups, and I propose asking you to continue your attention to the history of consumption, to learn from that history what there is that can be of help in a campaign against cancer.

In the first place, let us very frankly recognize the fact that there are great forces and great influences that would have us leave the subject untouched and even unrefereed to. Within two weeks, certainly within a month, a great newspaper refused to open its columns to discussions of cancer, because they said there was nothing to offer—it brought nothing but sorrow and pain, there was no way out, there was no reason for hope, there was nothing pleasant that could be said, there was nothing hope inspiring that could be said—and they declined to offer or open or make available their columns for things that represented nothing but sorrow.

Not dealing particularly with this subject but with a subject somewhat allied, I talked with Mr. O'Brien of the Herald two or three years ago, I told him of a conversation I had a few years before with Mr. Bok, editor of *The Saturday Evening Post* and of the *Ladies' Home Journal*, and he said he felt it was the duty of the newspapers with which he was connected to undertake

columns of those newspapers. He realized the fact that discussing those subjects in those particular newspapers would mean a loss of subscribers. He took the matter up with Mr. Curtis, the owner of the publications, and he said "In my judgment a considerable number of people will cancel their subscriptions if we frankly discuss those subjects in the columns of these papers," and Mr. Curtis said "Is it worth while?" and Mr. Bok said "It will be." "And if that be true," said Mr. Curtis, "let us go on with the campaign, we will take care of the people who cancel, we will take care of the interests of the *Journal*." They proceeded with the policy they determined on, and he said that within a month 30,000 subscribers had cancelled their subscriptions, but within two years there had been enough gain in circulation to more than offset the 30,000 who had cancelled. I discussed this matter with Mr. O'Brien, and he said that so far as the *Boston Herald* was concerned, that if the matter was of public concern, he would discuss it freely and frankly and take care of the interests of the paper.

There is another group of people, and among them health officers, who are doubtful about the advisability of undertaking a campaign for the control of cancer because of the fact that we have no specific for the cure of the disease and we have no vaccine by which the disease can be prevented, and being so poorly equipped, they hesitate to give their approval, they hesitate to undertake campaigns for control. Every health officer is confronted at times with the necessity of making decisions on matters of this sort.

I remember very well when it became necessary as health commissioner of Chicago for me to decide what I would do about consumption. I studied the death rates from that disease for about 50 years prior to the time when I had this decision to make. I found that in 1902 our death rate from the disease consumption had ceased to decline. It had reached the standstill and more than that it had somewhat increased. To my mind it became necessary to do some things in addition to the things that had been done, and I decided on three procedures—one, to require the compulsory pasteurization of milk, and the other to require the registration of cases of consumption with visitations by nurses and others in their homes, and third, the erection of a sanatorium and a building up of a sanatorium and clinic system.

Before beginning this I submitted the matter to the judgment of a friend in whom I had great confidence, a former commissioner of health of Chicago, and he advised me not to undertake it. He said "we have no weapons against consumption." Mind you this is more than 20 years ago, and we stood with relation to consumption where we stand against cancer now. We have no specific for the cure of the disease. We have no prophylactic or vaccine by which the disease can be prevented. To speak of it is to do nothing more than bring human sorrow, to speak of it is to

do nothing more than to bring despair and fear and anxiety to men and why undertake it since you have nothing to offer?

In spite of that advice we launched a consumption campaign, and I am going to tell you something about that now. I am going to make use of the experience of Chicago, not that there is anything peculiar there, not that there is anything that has been done in Chicago but what might have been done and better done in Boston, it happens to be the experience with which I have had some contact and concerning which I can speak with some authority.

Our first knowledge of consumption in the State of Illinois was about the year 1850. About that time Daniel Drake, one of the greatest characters American medicine had produced, journeyed from his home in Cincinnati to Illinois. He went up the Mississippi River to the Illinois and up the Illinois River to Chicago, and when he arrived he wrote back to his magazine in Cincinnati "from Jacksonville to Joliet I have been told that there is no consumption in Illinois, that it is free from the disease, furthermore those who come here with the disease find a haven and an escape from their disease." He proposed that the claims of Illinois be seriously studied, claims that Illinois was entitled to be a resort state.

Almost constantly prior to 1870 I find in the medical literature of that region reference to the fact that there was no consumption in the upper Mississippi valley except among the people who had gone there from New England and had taken the disease to their new homes in the Mississippi valley. That was the prevailing opinion, and almost innumerable opinions to the same effect might be cited.

Now what are the facts? The fact is that when the record first became available we had a death rate in Chicago and in the vicinity thereof of 300 (300 per 100,000)—but forget the standard of measurement and carry the figure 300. 300 represented the consumption death rate at that period in our history when our doctors weren't informed, when everyone was saying that consumption was of no consequence. There was no consumption problem as they regarded it then in the State of Illinois. There was the death rate. By 1902 this death rate had been cut approximately in half. It was 150.

Now what had brought that about? I termed that the period of indirect effort. It was the period in which we had no armamentarium for fighting consumption. We had no specific to cure it, no vaccine to prevent it, no hospitals in which it might be cared for, no sanatorium, no preventorium, no equipment whatsoever. Seemingly in the face of the disease society lay helpless. And yet by 1902 this rate had been cut approximately in half, and how? By campaigns of education by propaganda, by elevation of the standards of living, better wages, more expenditure on the home, better homes, better work-

ing places, better habits, better customs, more food and better food,—by such indirect efforts as these, supplemented by frank speech, supplemented by the spread of intelligence by the spoken word, nothing more than campaigns of education and propaganda the death rate from consumption had been cut in half.

Now will you think of this if you please—at no other period has there been so great a reduction in the consumption death rate as there was when without equipment, no vaccines and no specifics, no antitoxins, no hospitals, no sanatoria, no preventoria, when the only possibility of improving conditions was by appeal to the intelligence and to the interests of the people—in no other period has there been so great a numerical reduction as there was in that period.

In 1907 without abating any of the earlier efforts, by continuing all of the things that had been done we added thereto certain direct efforts for the control of the disease. We had heard of the efficacy of the hospital and of the sanatorium and of what could be accomplished by tuberculosis dispensaries and by nursing service, and we knew what could be done by the pasteurization of milk and by the registration of consumptives and by appeal direct to the consumptive himself, and by that line of policy which we term "direct effort" in addition to that which had been done in an indirect way we effected a further reduction of about 50 per cent—in round figures from a rate of about 150 to a rate of about 75, and that was a reduction of 75 points as compared to the earlier reduction in that prior period of 150 points as a result of the application of direct measures of control in addition to the measures of indirect control to which your attention has been called.

Now we stand under the necessity of making another decision. It is my judgment that the time has come if there is to be further improvement, further reduction of the consumption death rate, it is necessary that there should be the addition to our armamentarium of specific measures directed at the disease, specific substances similar, if you please, to the antitoxin for diphtheria, similar, if you please, to the vaccine for smallpox, and if we are to have a further material reduction in our consumption death rate, we must at about this period enter upon a third period, a period of specific action.

Now note if you please, this division into periods. The first is the period of indirect action, and then the period of direct action, and now it is proposed a period of specific action for which I sincerely trust our bacteriologists and laboratory workers will present us with the arms of offense and defense of which we are in need.

Now how does this apply to cancer? How does this story dovetail in with cancer? You have been kind enough to walk down the corridors of time and experience we have traveled in

reaching the period where we now are in the control of consumption, and it has been worth while. The results which have been accomplished have justified the expenditure of money. The results which have been accomplished have justified every statement, every promise, that was held out when the campaign was being launched something more than a quarter of a century ago. I believe with respect to cancer we stand where we stood with respect to consumption some 25 years or more ago. I believe that the campaign against cancer will be aided by indirect efforts, education, propaganda, if you please, and campaigns having as their purpose stimulating the interest of the people, informing them of the facts about cancer. I listened today to a talk by the Chairman of the evening and I wish you could have all heard that talk and gathered from the speaker of the occasion the facts that are now at hand, that are available for use against this disease. It is true we have no antitoxin. It is true we have no specific. But we do have more of the facts and more of exact information about cancer than we had about consumption when we were beginning some 25 or 50 or more years ago. A campaign that tends to inform people as to what should excite suspicion, what should cause investigation, a campaign that would cause men to avoid all those things which make for cancer and that would stimulate those habits and customs that antagonize cancer would attain something of progress comparable to the gain made against consumption.

We are somewhat more advanced than at the period when we launched our campaign against consumption. You have heard from your Governor and from your Mayor that you are engaged in direct effort. You have cancer hospitals dotted over the State of Massachusetts where cancer clinics and dispensaries and cancer nursing services are available, in other words, you stand midway between those two periods. You are going on with your work of propaganda and education, and simultaneously there with you are providing the same type of institution fitted for the needs or control of cancer that have been found effective against consumption.

And now there is the story. We are merely asking you of the State of Massachusetts, we are merely asking you to lend your support of interest and of money, your support as citizens, to the same kind of campaign that has demonstrated its effectiveness in the control of consumption, and it has proven worth while with consumption. It has there demonstrated that men may not see, that men may not easily pre-visualize or understand, men may not clearly comprehend the ends. The facts flow in ways that men cannot understand, and that is all that we are asking, and I am sure that the intelligence of this community will respond to the asking and that you will travel the path for the control of this disease

that experience has proved to be the proper path in the control of its companion disease.

The responsibility isn't yours alone. You are not deciding alone for the people of Boston and of the State of Massachusetts. As you decide, so your decision will be in other States of the Union. As you succeed, there will be other States and communities that will follow in your footsteps. That which is undertaken here to night, that which is launched here tonight, and that which will be presently done in Massachusetts will have a hearing which will radiate to other lands until the world has been belted around. (Applause)

In introducing Dr. Cabot Dr. Greenough said: We had to go as far away as Chicago to find an authority to talk to us on the public health aspect of cancer, but for one to talk on the social aspects of this disease we come nearer home. I am willing to believe that the gentleman I am about to introduce discovered social ethics. I know he discovered social service for I saw him often during the period of its gestation. I introduce Dr. Richard C. Cabot. (Applause)

Dr. Richard C. Cabot said: Mr. Chairman, Ladies and Gentlemen, I have one advantage tonight over most of the speakers who preceded me. They have been doing the work of this campaign, to them is due the credit of all this. Therefore they couldn't so freely as I can, praise what has been done in this campaign.

The hospital at Pondville for cancer is one which anyone who knows hospitals would recognize at once as belonging almost in a class by itself. I have lived in hospitals a considerable fraction of my life. I know hospitals in this and other countries, and when I went to visit our State hospital for cancer, I said to myself beforehand, "now those people are tackling one of the hardest problems that has ever been known to be tackled." They are having their courage with them, for a hospital for cancer would be a place hard to make human, cheerful and encouraging. Think of what it means—a hospital for this terrible disease. So I expect to see a place where people had done their best in overcoming discouragement. Now to my surprise and delight I found that hospital not only no more discouraging than most hospitals, it seemed to me the atmosphere there of hope and courage is superior to that I have ordinarily seen in that of general hospitals in this and other cities. Now, Ladies and Gentlemen, let me tell you that that is an extraordinary feat.

Pondville is in a sense the center of this campaign but it is only one part of it. The speakers have referred to the different clinics for cancer scattered over the Commonwealth. The hospital alone cannot meet all the demands of the problem though the hospital can do much. What has made this hospital? What has given it the qualities I have alluded to? A number of elements have conspired to that end. In the first place, the quality of the surgical and radiologi-

cal service, the quality of the medical and scientific service there given. Really it is enough to make any of us feel proud to see what we have done and are doing there. I know some thing of medical service in hospitals.

I am not always in the mood to praise everything doctors do. I am sometimes at loggerheads with members of my profession and I am therefore glad to speak of the extraordinarily fine work done from the professional point of view, but it is also from the human spirit of which Father O'Connor spoke earlier. The spirit of humanity and cheerfulness and explanation and courage that is given by the physicians and also by that extraordinary corps of nurses which after all makes such a tremendous difference to the welfare of the patient and also by that third group to which Dr. Greenough has referred—the social workers. For at a place like this we must not be content with giving only good medical service. We must let them know they are getting it. I have seen good medical clinics where good work was done but people didn't go there because of the way the work was done. Now here in this hospital at Pondville they are equally good in conducting the service from the scientific point of view and skilful and humane in the way they have been doing things.

Now what is to make this campaign a success throughout the State as we believe it will be? It is to be not only the public support for this central hospital at Pondville but for the clinics throughout the State. If the clinics are left to what the doctors doing their level best can do, they will not be successful. Many times in a doctor's experience one has an occasion to see a clinic start and then be built up and be attended by a great many patients and be successful or stay so. What makes the clinic build up? It is the attention given by those in control to make sure that the things being done by nurses and social workers are what people like.

Now in each different clinic which Dr. Bigelow and his assistants have started throughout the State is a local committee, lay and medical to see how this thing is done, and if we think that now the Governor and the Legislature and the Commissioner of Health and the committees over which Dr. Greenough presides can do it all then if the people think they can sit back and see it go by, they will be disappointed. It has got to be the local spirit of the community to see that the people find out what can be done for them in their community and homes.

It is impossible to have Pondville a place where people go to die. It is impossible, in the first place, because the place would be unbearably sad. It must be a place where people are cured or spared in many cases. People when they come to the end of their lives want to be near their homes. So there must be provision for

people who are to end their lives being near their homes. People go a long distance to Pondville for relief, but when it comes to the end of their lives, they need to be near their homes. So we need places near their homes, and then we need social service near their homes. These people have to be followed up after the clinic. They do not return to the clinic as often as they should, in other words we ought to take that progressive attitude toward the disease as we took against tuberculosis. We ought to go after the patient instead of letting the patient come to us. You may not think that is necessary, but it is necessary in these cases and that means that the social worker should follow these people up to see that they are getting the very best towards cure or towards relief.

Such institutions as we have started in this campaign have been inaugurated with an extraordinarily high standard, and, of course, can't be maintained cheaply. Of course, this thing has got to cost money—it can't be done in a niggardly way and I want you to understand that the State has been liberal in this matter, because this being the first State in which this campaign starts we owe it to the whole country and to some extent to the whole world not only to start it but to start it right, and it can't be started right if you go at it in a niggardly spirit. And we have gone about it right spending money for first-class service, and when it comes to the attention of the tax payers, they must remember it is being done not only for Massachusetts but for the whole world, for whom, I believe, Massachusetts is going to set an example. (Applause)

DR. GREENOUGH: The American Society for the Control of Cancer has sought to employ every agency available for the dissemination of knowledge and for the excitement of interest in the cancer problem. The moving picture has great possibilities in this direction, and we are going to show you a moving picture film produced by the American Society which deals with this subject as a close of the evening's meeting.

Moving picture entitled "A Fortunate Accident" was shown. This depicted the street accident of a woman given a thorough examination by the attending physician who thereby discovered an early and unknown cancer which was treated successfully.

The meeting was then adjourned.

VERMONT STATE MEDICAL SOCIETY

USE OF ULTRA-VIOLET RAYS IN TREATMENT, WITH SPECIAL
REFERENCE TO CHILDREN*

BY EDWIN T. WYMAN, M.D.†

THE value of sunlight as a health giving agent has been realized by mankind from the very earliest time of which we have any record. The sun was worshipped in ancient civilization because of its supposed power of being able to drive away the demons of sickness and to expel disease. Herodotus, 431 B. C., mentions the sun-bath and recommends it for restoring muscular tone. During the Roman era, the sun was made the central object of adoration. A solarium, situated, as a rule, on the roof of a house, was considered a part of almost every Roman home.

Heliotherapy, while thus well known as a therapeutic measure in olden time, became a lost art for many centuries, practically until the nineteenth century.

The centuries' old saying, that "Light is the life of man" is only now beginning to be realized in full significance. Sir Oliver Lodge aptly sums up the whole question of sunlight in the following words—"When the most efficient parts of sunlight are excluded, the organisms are apt to succumb to their ravages when unaided by the beneficial influences of sunlight." Sir Isaac Newton, by his discovery of the spectrum, opened up the path to the various fields of invisible radiant energy and to the production of artificial therapeutic rays. Even Newton only saw the spectrum of visible radiation and it was not until 1801 that Rutter, noticing that silver chloride was blackened by invisible rays situated beyond the visible violet rays, rightly concluded that radiant energy is present in the ether which is visible to the eye. These radiations, owing to their position in the spectrum, are called ultraviolet rays, and these are the rays which have proved to exert the greatest therapeutic influence.

When a narrow beam of sunlight enters a dispersing prism, that portion of the rays which is not reflected, is refracted at the surface as it enters the prism and is thus decomposed. Still further decomposition or dispersion occurs at the surface of emergence. A vari-colored image, called a spectrum, gradually changing from red at one end to violet at the other end, is produced. From the red end to the violet end the wavelengths of the radiation causing the different color sensations gradually become shorter. The shorter the wavelength, the greater the refraction. Beyond the visible red rays there are invisible heat rays which may be detected by their

heating effect on the blackened bulb of a thermometer. At the other end of the spectrum, beyond the violet, there are invisible ultraviolet rays, the presence of which can be detected by chemical reactions or fluorescence. The ultraviolet light is made up of those rays of which the wavelength is from 390 to 60 millimicrons. The longer ultraviolet rays are termed the near ultraviolet and include those present in the solar spectrum, 390 to 290 millimicrons. The shorter ultraviolet wavelengths are designated far ultraviolet rays and comprise those shorter than 290 millimicrons. Beyond the ultraviolet rays lie the X-ray and gamma region. On the other end of the visible spectrum, beyond the red rays, we find the heat and infra-red rays, and, still farther, the long waves used in wireless. A consideration of the absorption spectrum of protoplasm reveals some very important facts concerning the penetration of these various rays into tissue. For example, in the heat region of the spectrum and especially the part of the heat region which lies nearest the visible spectrum, it will be observed that, if we move in the direction of the visible rays, the absorption index decreases and the penetration of the tissue by the rays increases. If, therefore, we wish to use radiant heat as a therapeutic agent, greater penetration will be obtained, if we use those radiations lying as close as possible to the visible part of the spectrum. If we could obtain a sufficient amount of energy, we would observe a greater penetration, if we were actually using the visible rays. The chief difficulty, in using visible light as a source of heat, is to obtain sufficient intensity of heat-penetrating rays without, at the same time, having an excess of long wavelengths or dark heat rays, which are absorbed at the surface, and, therefore, produce excessive surface burning. If one exposes the skin to the radiant heat from a hot stove, even though the intensity of the radiations exceeds the tolerance of the skin, the body, as a whole, is not appreciatively warmed, but an exposure of the skin to the radiant heat of the sun will warm the body to the bone without burning the skin. The reason for this is to be found in the fact that the heat rays from the stove are soft, easily absorbed rays, while the radiations from the sun contain hard, penetrating heat rays. The solar rays penetrate deeply into the body and warm the blood stream, while the radiations from the stove are absorbed too near the surface of the skin to warm the blood.

In the ultraviolet region of the spectrum, the

*Read at the Vermont State Medical Society, Middlebury, October 13, 1907.

†For record and address of author see This Week's Issue, page 524.

conditions are just the reverse. As the wavelength decreases, the penetration increases. The soft ultraviolet rays have a longer wavelength than hard ultraviolet rays. The near or soft ultraviolet rays contained in the sun's spectrum are non-penetrating rays and are absorbed by the skin. They are easily filtered out by dust or water particles in the air before they reach the earth. They are also largely filtered out by ordinary window glass but are readily transmitted by quartz. These ultraviolet rays of the sun's spectrum vary in intensity during the different seasons of the year, being highest during the summer months and are lowest during the winter months. It is believed that this seasonal variation is due to the absorption of the shorter wavelengths by the atmosphere. In any event, it is evident that, from a therapeutic point of view, the determining factor is the quality, not the quantity of these short or ultraviolet radiations. We know that the lack of these short rays will predispose a child to rickets and spasmophilia and possibly may make them more susceptible to many other diseases. While the cause of rickets is not known exactly, probably light or the lack of sunlight is a very important factor, while poor ventilation, overcrowding, diet, climate and previous diseases may also be factors. We find here the probable explanation why negroes with their dark pigment and the dark-skinned Italian are so prone to rickets when removed from their native land. In Africa, the negro goes about naked and attains the maximum advantages from the sun's rays. In sunny Italy, the Italian, likewise, spends most of his time out of doors and rickets there is rare. When these people, however, come to the temperate zone, as in this country, they are forced to wear clothes and are more closely housed. The pigment in their skin filters out many of the already diminished ultraviolet rays in the sunshine; they lose the protective action of the sun to a great extent and, consequently, are prone to rickets.

Here in New England, during the warm summer months, it is possible to use direct sunlight in treating infants and children. It is impracticable to expose an infant and often inadvisable to expose older children to the direct rays of the sun during the fall, winter and spring months on account of the cold and consequent loss of body heat. This difficulty, however, may be overcome by the use of a quartz window or a glass which is transparent to ultra-violet rays in order that the baby may have its sun treatment in a warm room. Window panes made from fused quartz transmit ultraviolet light better than any other known substance. The cost of producing it, however, makes it prohibitive except for experimental purposes. There are several ultraviolet transmitting glasses on the market. According to the report of the Bureau of

Standards in Washington D. C., the ultraviolet transmission of the various glasses is as follows—

Corex glass which is manufactured by the Corning Glass Works of Corning New York exceeds all other glasses yet produced and rivals quartz in transparency in the spectral region of 260 to 300 millimicrons. For therapeutic purposes, in regard to transparency to ultraviolet rays this may be considered the perfect glass in that all glasses reflect about 8% of the incident light and because the maximum possible transmission is about 92% of the incoming ultraviolet solar rays Corex transmits 91.4% to 91.8% of the total ultraviolet solar rays which are absorbed by window glass. Corex glass appears to undergo no appreciable change in transmission when exposed to solar radiation. On the other hand exposure to a quartz mercury arc causes a very marked decrease in the transmission.

Vitaglass an English product transmits 50% to 60% of the total ultraviolet activating solar rays which are absorbed by ordinary window glass.

Heloglass (Vioray) transmits about the same as Vitaglass, 50% to 60%. Vitaglass after exposure in a hospital window for one year was found to have a transmission of 25% at a wave length of 302 millimicrons. Further exposure to the quartz mercury arc reduced the transmission but little showing that solarization was complete. Heloglass has not been on the market for a sufficient length of time to obtain a complete solarization, but, however, two samples of Heloglass and Vitaglass exposed simultaneously to the sun in October and December, were found to have decreased in transmission at about the same rate. The average transmission of Heloglass after complete degeneration by the quartz mercury arc is about 30% at a wave length of 302 millimicrons.

Cel-O-Glass which consists of a film of cellulose acetate on a wire mesh, transmits about 30% of the total ultraviolet solar rays which are absorbed by window glass. A sample of Cel-O-Glass that was exposed to the sun for 400 hours during the months of April to October decreased but little in transparency at a wave length of 302 millimicrons. On the other hand, samples that transmitted 30% at a wave length of 302 millimicrons when new, transmitted only 5% to 10% at this wave length after being exposed on the side of a building continuously day and night for eight months, April to December, showing that this change in transparency may be owing to the varying conditions of weather. However Cel-O-Glass is cheap and can be easily replaced. Windows of these glasses should be ideal for nursery windows where the baby can have its daily sunbath, for hospital windows and a number of possible applications for the use of ultraviolet light in the sun's rays.

However, during the winter months in New England, it is questionable whether or not there are sufficient ultraviolet rays in the sun's spectrum to be of much therapeutic value, although, our experiments tend to make us believe that the sun's rays through a quartz window are of definite therapeutic value even during the winter months.

Dr. A. Rollier of Leysin, Switzerland, may be said to be the pioneer in the field of sunlight therapy. He was the first to lay down a well-defined scheme for carrying out heliotherapy. The essential point of his routine treatment is to gradually increase the exposure of small areas of the body to the sun's rays until the entire body is exposed. Thereafter, the patient receives a daily sun-bath of from three to five hours. It should be pointed out that, whereas Rollier attributes the beneficial effect of his treatment to the sun's rays, it actually consists of the sun's rays, fresh air and rest. Although he recommends this form of therapy in tuberculosis, undernutrition, chronic infections, rickets, etc., the best results have been obtained in surgical tuberculosis and in rickets.

It may interest you to know that it is not necessary to journey to Switzerland to secure this form of treatment as many children affected with bone and joint tuberculosis, who are living at the New England Peabody Home for Crippled Children, can testify.

In our locality, when direct sunlight is used, the infants are placed in a warm room with the sunlight coming through an open window, on a veranda or sunporch or in the shelter of a garden or yard. If given in the open, the infant should be protected from the wind by a cloth screen on three sides. A sheet draped on three sides of the crib will do, although it is better to have the shelter four or five feet high. On cool days the hands and feet should be kept warm by means of mittens and socks, and a hot water bottle or an electric pad can be used to maintain the body heat. It is important, always, to protect the baby from drafts. In starting the treatment, the infant should wear a diaper, band and shirt. The head and nape of the neck should be protected from the direct rays of the sun by a sunshade, cotton hat, or a sheet draped over the head of the crib. During July and August the bath should be given between 8 and 10 a. m., or between 2 and 4 p. m. In June and September, it should be given in the middle of the day. At the start, the bath may be given two or three times a day, and, as the length of exposure increases, the number of baths are gradually decreased to one or two a day, depending on the complexion of the patient and the intensity of the sunlight. The entire body is gradually exposed to the direct rays of the sun. First, the baby is exposed with his diaper and shirt on. Next, the diaper is removed, and, last of all, the shirt is removed. The scheme used takes eighteen

days to gradually get the exposure of the entire body up to one hour to the front and one hour to the back. This same scheme is used with children. First the legs and thighs are exposed, then the abdomen from the ribs to the hips, and the chest last.

No hard and fast rule can be laid down. The plan should be varied according to the general condition of the patient, the tolerance of the sunlight, temperature and wind, height of the sun and clearness of the atmosphere. It is better for patients whose skin burns very readily to take shorter treatment, three or four times a day, in order to more gradually accustom the body to the sun. Many patients with dark skins can withstand twice the exposure given in the table we use. The whole object of the scheme is to get the patient well tanned without sunburn.

At present, during the winter months and on cloudy days in summer, we are using a substitute for sunlight in treating infants and children. The mercury vapor quartz lamp and the carbon arc lamp are the best means of artificially producing rays similar to the short therapeutic rays in the sun's spectrum. There are four American Mercury vapor quartz lamps on the market, the Alpine Sun Lamp, the McIntosh Lamp, the Burdick Lamp and the Victor Lamp. The Alpine Sun Lamp and the McIntosh Lamp are equipped with the Hanovia Burner, while the Burdick and Victor Lamps have the same burner—the Cooper-Hewitt uvirac. While ultraviolet rays from a carbon arc are not as intense as those from a mercury vapor quartz burner, the spectrum is more continuous and is more like the solar spectrum than the spectrum of the mercury vapor quartz lamp. All these lamps give off far ultraviolet radiations not present in the sun's spectrum, the exact physiological action of which is not definitely known at present. While these lamps serve as a substitute, I believe that direct sunlight, when it can be obtained, is the best means of giving general ultra-violet therapy. We are now using Alpine Sun Lamps in the Out-Patient Department and Medical Wards of the Children's Hospital, where individual treatments are given. In the Infants' Hospital we are using a room with four Burdick Lamps suspended near the ceiling, arranged to give as even a distribution of light as possible over the cribs. This permits us to treat a number of patients at the same time.

In regard to the use of ultraviolet rays in the treatment of disease in infants and children, it is very difficult to draw definite conclusions regarding the beneficial effects in all of the various conditions in which this form of therapy has been advised. During the past four years we have been studying the effects of this form of therapy at the Children's and Infants' Hospital in the treatment of a number of different diseases.

Rickets occurs universally in northern civil-

ized countries, such as Europe and North America, where there is lack of sunlight during the winter months. The seasonal variation in the occurrence of rickets offers striking evidence of the part sunlight plays in the prevention of the condition. Rickets flourishes generally under poor hygienic surroundings and especially under conditions where direct exposure of the rays of the sun is infrequent or entirely absent. Palm¹, in 1890, recognized the full importance of the lack of sunlight in the etiology of rickets and gave remarkable recommendations for the eradication of the disease by means of sunlight. Radzinski² wrote, in 1912, "It is the sun that plays the principal role in the etiology of rickets." He gave the first proof of the favorable influence of light on metabolism by an experiment on puppies. In June, 1919, Huldshinsky³ reported that the ultraviolet ray therapy exerted a curative action in human rickets. He treated four children who had advanced rickets with the mercury vapor quartz lamp and found that at the end of four weeks, it was possible to demonstrate by X-ray the deposit of lime salts at the ends of the long bones of the extremities, and, at the end of two months the healing was almost complete. This discovery of Huldshinsky of the curative action of light in human rickets has been corroborated by numerous other investigators. Hess and Weinstock⁴ have made the remarkable discovery that such oils as cottonseed and linseed, which do not protect animals from rickets, and green vegetables, which have little or no antirachitic properties, can be endowed with anti-rachitic potency by exposing them to the radiation from a mercury vapor quartz lamp. The result of many studies has led to the conclusion that the chemical substances which can be activated by ultraviolet rays are cholesterol in animal foods and phytosterol in vegetable foods. These substances are present in almost every vegetable and animal cell. It is now generally recognized that rickets can be cured both clinically and, in experimental animals with certainty, by the administration of cod liver oil. It can also be cured with certainty by the action of ultraviolet light.

Spasmophilia is a nutritional disease characterized by convulsions, carpopedal spasms, larvngismus stridulus and an extreme irritability of the nervous system to mechanical and electrical stimulation. The blood shows a low serum calcium concentration. It has been made quite clear that all cases of spasmophilia have rickets, but, all patients with rickets do not have spasmophilia. To treat an established spasmophilia, one must use measures that will increase the blood calcium rapidly and permanently. Ultraviolet therapy has been shown to exert a favorable influence in spasmophilia. These rays not only influence the symptoms favorably but the symptomatic relief is paralleled by a return of

the calcium concentration in the blood serum to normal.

Gerstenberger and Wahl⁵ and others found the ultraviolet ray of decided value in the treatment of peritoneal glandular and osseous tuberculosis. Beneficial results were not obtained in pulmonary tuberculosis of the miliary type, although, treatments were begun early. The patients we have treated for tuberculosis of the mediastinal glands and tuberculosis of the mesenteric glands have responded well to ultraviolet therapy. The treatments have seemed to improve the patient's general condition, to relieve the symptoms such as cough in the bronchial and abdominal pains in the mesenteric cases and to favor early calcification of the glands. Our results, in cases of tuberculous peritonitis, have been variable. It is not expected that ultraviolet therapy will cure all cases of tuberculous peritonitis. However our cases show that it is a valuable therapeutic measure and we believe that it should be used unless there is marked febrile reaction.

We have observed marked improvement in all of the patients treated for psoriasis while they received treatment.

It is much more difficult, in treating tuberculosis and many other diseases with ultraviolet rays, to draw definite conclusions as to the benefits obtained from this form of therapy, because in rickets and spasmophilia the X-ray and blood chemistry gave confirmatory evidence of recovery. One has to depend almost entirely on clinical findings to note the progress of the case and it is often difficult to tell how much the disease has been influenced by the rest, fresh air, proper nourishment and general hygiene given as routine treatment in addition to the ultraviolet therapy.

It seems fairly certain that the average infant and young child in Boston does not get a sufficient amount of sunlight during the winter months and it is possible that in the future it may be shown that a certain amount of sunshine, either natural, through an ultraviolet transmitting glass or artificially produced ultraviolet rays, during the winter months will prove useful in maintaining a child's resistance against infections so common during the winter. Sunshine should not be looked upon as a quick and sure cure for all ailments. Sunshine, however, as well as other forms of radiant energy, are of unquestionable value in the prevention and cure of a number of diseases.

REFERENCES

- 1 Palm Practitioner 1890 IX 270-371
- 2 Radzinski J. Compt. rend. Assoc. Intern. de Pediat. 1912 p. 305
- 3 Huldshinsky K. Deutsche Med. Wochenschr., 1919 XIV 12
- 4 Hess and Weinstock Jour. Biol. Chem., 64 151 1915
- 5 Gerstenberger and Wahl Jour. of Mo. State Med. Assoc. XX 61

THE USE AND ABUSE OF PHYSICAL THERAPEUTICS*

BY FRANK GRANGER, M D †

THE World War emphasized the rationale of physiotherapy. As a result the American Medical Association formed a Council on Physical Therapy. This Council is to be to physical measures of treatment what the Council on Pharmacology has been, and is, to drug therapeutics. It is composed of physicists, biophysicists, physiologists, internists, etc. Some of its activities are

- 1 The preparation of basic papers on such subjects as the roentgen ray, radium, hydrotherapy, electro-therapy, massage, mechanotherapy, exercise, and muscle training. An exhaustive paper on the physiological effects of heat has already been published.

- 2 The standardization of apparatus.

- 3 The careful investigation of the advertising literature with the aim of curtailing extravagant claims, particularly in regard to treatment and cure of disease.

- 4 The laboratory and clinical investigation of the effects and results of the treatment of disease by means of physical measures.

In the past, the lack of adequate instruction in the medical schools—the avidity with which quacks and charlatans grasped these measures—the overenthusiasm of some physicians specializing in physiotherapy—the lack of careful laboratory check ups—and the ignorance in general of the medical profession, relegated this method of treatment to an obscure and oft-times derided position.

The mysticism which shrouds electrotherapy is being rapidly dispelled.

We now know that one or more of the following properties are inherent in all forms of Electricity

- 1 *Heat* The tissues offer more or less resistance to the passage of electricity, hence heat is generated.

- 2 *Mechanical* The faradic and sinusoidal currents cause muscular contraction, so does galvanism if interrupted. Similarly does the static sparks or static wave current.

- 3 *Chemical* The only two electrical currents having distinct polarity and hence chemical effects are the galvanic and static, in each case the positive pole is a sedative and has an acid reaction, while the negative is an irritant and has an alkaline reaction.

- 4 *Psychological* All forms of treatment, even at times surgery, possess this in varying degrees. With its impressive and awe-inspiring apparatus, physical therapy

is capable of making the most profound mental impression on the patient.

In the past the charge has been made that these valuable adjuncts to standard treatment possessed only this last property.

Some of the laboratory observations were

- 1 The influence of ultra violet on the chemistry of the blood, whereby the calcium and the phosphorus content of the blood were generally augmented.

- 2 The power of diathermy in suitable cases of nonunion or delayed union of bone in hastening the formation of callus.

- 3 The more rapid disappearance of calcium carbonate in bursitis with calcification by means of the same diathermy.

- 4 The increase in basal metabolism under auto condensation.

- 5 The increase in urinary solids, hitherto deficient, by auto condensation, and at times by the sinusoidal current.

- 6 The deposition of calcium salts in rickets.

- 7 The influence of actinic energy not only on the hemoglobin content of the blood but also on the number of red cells, and not infrequently on their differential count.

- 8 The increase in the alkali reserve under the administration of radiant heat.

The following cannot be reiterated too often. Physical therapeutics should be used only as one of the triad of medicine, surgery and physical therapeutics, and only in connection with its sister members. Generally the best results are secured from a prescription combining at least two of the five subdivisions of physical therapeutics—hydrotherapy, electrotherapy, passive exercise in the form of massage, active exercise in the form of gymnasium or games, muscle reeducation, and mechanotherapy (the last strictly speaking a combination of muscle reeducation and gymnasium with the possible added incentive of competition).

INDICATIONS FOR PHYSICAL THERAPEUTICS

Nonunion or Delayed Union of Bone Here adequate fixation is essential. Given this, diathermy, or diathermy and ultra violet are indicated. Ordinarily, though, diathermy suffices in a fair percentage of cases. Whenever possible the lateral method should be used. If not, the double cuff method, though less efficient and requiring a longer time both for treatment and for recovery, will accomplish the same result but with a decreased percentage of success. If the parts are encased in a plaster cast, windows should be cut in its lateral or anteroposterior aspects. One window should be at the upper edge of the fracture, the other at the lower edge. Into these apertures, metal strips should

*Read at the Vermont State Medical Society, Middlebury, October 13, 1922.

†For record and address of author see "This Week's Issue" page 524.

be inserted. In this manner, an adequate heating through may be secured. I have never seen any swelling of the tissues from such a procedure. If after four weeks there still is no callus, a general treatment with air-cooled ultra violet should be added. Its value may be enhanced by the daily oral administration of from 10 to 15 grains (0.65 to 1 Gm.) of some calcium salt.

Bursitis This condition, especially of the subdeltoid type with calcification, as a rule promptly yields to (a) diathermy through the bursa and contiguous tissues, (b) chlorine ionization through these strictures, (c) massage for its local circulatory effect, (d) stretching gentle at first and later, if there is not too much reaction, vigorous. While in many of these cases the patients get well spontaneously without any treatment, if physical measures are employed pain is lessened, the time of disability is shortened, and the percentage of recoveries is increased.

Neuritis Focal infection should always be sought for and removed if found. The treatment should be individualized. In general, there should be a primary application of heat. This may be radiant heat, diathermy, infra-red, or the whirlpool bath. This should be followed, dependent on the type of neuritis and the degree of inflammation by galvanism or the static brush discharge. In cases of extreme nerve inflammation, heat and the static brush discharge may be the only thing that can be tolerated by the patient. Later, careful massage and motion should be used. The latter may be active assistive, active, or active resistive.

Pneumonia Diathermic heat is of value in this disease as it diminishes pain, improves transiently the heart's action, and induces sleep. These factors alone make it a valuable adjunct to other standard or routine methods of treatment. I do not believe that diathermy ever shortened the course of this disease, but by relief of pain and increasing the amount of rest it may tide the patient over until crisis or, rarely, crisis occurs. The Brooklyn Naval Hospital employs diathermy as an adjunct in every case as soon as the diagnosis is made. The same holds true at the On-Shore Station of the Boston Floating Hospital. That diathermy does relieve the pain is attested by the fact that in hospitals where it has been used as a routine measure the bills for narcotics have been lessened by at least 50%. At least, diathermy should be considered as a possible adjunct to other treatment. The technic is simple, and I have never found any bad effects on the heart with this procedure. Six by nine electrodes should be placed anteriorly and posteriorly, the posterior one more to the left, the anterior one more to the right. From 1,000 to 1,800 milliamperes may be safely used. It is well to turn

the current on gradually, taking three or four minutes to attain the maximum strength. The anterior electrode may be held on by a sandbag, hot water bottle, the hand of the operator, or adhesive plaster. The duration of the treatment should be at least thirty minutes. Treatments may be given as often as indicated, varying from every six hours to once a day.

Fractures Despite certain published reports, physical therapeutics intelligently used is of the greatest benefit. The wage earner is little interested in being told "that his bone has knitted" if because of lack of functional restoration, he is unable to work or can do so only with difficulty. Delayed union or nonunion has already been discussed. Heat (radiant), infra-red or diathermy is valuable to relieve pain, to promote a more active local circulation and to secure a certain degree of muscular relaxation. This should be followed by careful manipulation. Passive exercise should be either tabued or used with extreme caution, as a heavy handed technician can easily cause displacement or refracture. Active assistive exercise, on the other hand, is of great value. As the condition improves, active resistive movements should be employed. If there is nerve injury galvanism and some of the mechanical currents may be indicated.

Arthritis In the consideration of this pathologic condition it is presupposed that the requisite careful physical and laboratory examinations have been made, and that, where foci of infection may be a causative factor they have been removed. Symptomatic cure is frequently attained by the use of diathermy and galvanism and at times by the addition of autocondensation. Pain is generally relieved. If there is no mechanical obstruction, motion becomes free. Although this improvement may be permanent, in some cases the symptoms return from eight to sixteen months later, as a rule, however, the same relief as before can be attained.

Time does not permit the enumeration of other pathological conditions in which these measures of treatment have an accepted place. In this brief paper I have endeavored to show that there is a rational scientific basis for the use of physical therapeutics and that as an adjunct to other standard measures it is capable of shortening time of disability, securing functional restoration, and of enabling some, who otherwise would be helpless cripples, to return to their rightful position in the world.

MISCELLANY

AS OTHERS SEE US

What do they see? A perfect portrait? A work of art? A masterpiece? Maybe. And again maybe

not. Have you heard anyone say? If not, better enquire. Their view point is good they have the perspective. They see us as a whole and they examine us in detail. What they see ought to be a correct picture. Their verdict is emphatic and weighty. If unfavorable, what? Who is mistaken? Are they? Or, are we?

Too little attention is given to public opinion by all classes and groups. Teachers, clergymen, lawyers, physicians, retailers, wholesalers, producers, each and all must study public opinion if they wish to succeed in the fullest sense. Public judgment can and does point out weaknesses which are not seen by introspection.

Adverse criticism should be a signal for thinking. If there is no truth in it, it will quickly succumb. If truthful, it had better be faced at once and the fault corrected. Class and mass will succeed the better they understand each other and the more they attempt to meet the other's needs.

W G R

STATE DEPARTMENT OF PUBLIC HEALTH

REPORT FOR MARCH 1928

The following communicable diseases have been reported during the month: chickenpox, 170; diphtheria, 3; German measles, 5; measles, 325; mumps, 448; scarlet fever, 60; streptococcal sore throat, 14; typhoid fever, 1; tuberculosis, 17; whooping cough, 141.

The following examinations were made by the Laboratory of Hygiene:

Examinations for diphtheria bacilli	85
for Widal reaction of typhoid fever	25
for malarial parasites	0
for tubercle bacilli	238
for evidence of syphilis	296
for gonococci in pus	83
of blood for contagious abortion in cattle	25
of blood for white diarrhoea of fowls	1313
of water, chemical and bacteriological	34
of water, bacteriological	112
of milk, market	19
of milk submitted for chemical only	3
of milk submitted for microscopical only	18
of milk submitted by Department of Agriculture for added water	4
of foods	25
of drugs	0
for the courts, autopsies	1
for the courts, miscellaneous	28
Autopsies to complete death returns	1
Examinations of animal heads for evidence of rabies	1
Miscellaneous examinations	71

The Division of Venereal Diseases reports as follows:

Cases of gonorrhea	21
of syphilis	43
of gonorrhea reporting for treatment	5
of syphilis reporting for treatment	7
for intravenous treatment	5

Total treatments	85
Total gonorrhea outfits distributed	92
Wassermann outfits distributed	348

The Division of After-care for Poliomyelitis reports 54 patients seen, 16 new pieces of apparatus fitted, nine patients were admitted to hospitals and 12 patients were discharged from hospitals. Sales from articles made under direction of the vocational teacher amounted to \$76.47.

In the Division of Maternity and Infancy, the nurse visited six towns.

BENNINGTON COUNTY MEDICAL SOCIETY

The Society meets regularly the third Wednesday of each month, the meetings are held jointly with the staff of the Putnam Memorial Hospital.

The Society has eighteen active members, the officers are: President, John H. Reichling, M.D.; Vice-President, E. M. Gardener, M.D.; Secretary, Treasurer, John D. Lane, M.D.; Delegate, L. H. Ross, M.D.; Delegate, C. S. Buchanan, M.D.; Alternate, E. M. Gardener, M.D.; Alternate, John D. Lane, M.D.

At the January meeting, the subject under discussion was, "Surgical Conditions of the Abdomen."

At the February meeting, Schuyler M. Martin, M.D., of Troy, N. Y. presented an able paper on the Electrocardiograph.

At this meeting the feasibility of a credit rating list was discussed, but no action was taken.

At the March meeting, Wm. Kirk, M.D., of Troy, N. Y. presented a fine paper on Basal Metabolism.

The subject for the April meeting will be Effusions in the Pleural Cavity, and several cases will be presented.

Speakers expected to address the Society in the near future are Doctors McSweeney and Beecher of Burlington and Rogers of Pittsford, Vt.

The Society which was somewhat somnambulant in the past has awakened, meets regularly and realizes that the price of professional life and success is alertness, interest and coöperation.

The question of a proper medical practice act for Vermont is ever a live one with this Society.

JOHN D. LANE, M.D.,
Secretary

NEWS ITEMS

COUNTY NEWS AND NOTES

The Burlington and Chittenden County Clinical Society has had four meetings this year. In November at the annual meeting, R. S. Maynard was elected President, E. W. Pike Vice-President and P. K. French Secretary-Treasurer. At this meeting Dr. B. D. Adams the retiring President spoke on the subject "Radium—Some of its properties and dosage," reporting thirty cases of cancer of the face and mouth.

At the December meeting, Dr. Ball of Rutland was the guest speaker, his subject being "The Interrelationship of X-Ray and Surgery."

The speaker at the January meeting was Dr. George Warren of New York City, who spoke on the "Diagnoses of indefinite pains of the kidney." This paper was especially interesting because of the many fine X-ray plates Dr. Warren brought with him to illustrate his talk.

In March the meeting was devoted to the subject of Gynecology. Dr. G. I. Forbes of Burlington and

Dr H. A. Durfee of Burlington being the speakers Dr Forbes took as his subject the use of Electro-Therapy in Gynecology, while Dr Durfee spoke on Leucorrhoea

Chittenden County Clinical Society has lost through death during the year past three members Dr George H. Branch of Grand Isle Dr W. W. Townsend and Dr Barnet Frank of Burlington These men well known in their communities for faithful service and devotion to duty, will be very sincerely missed by the members and by the citizens of the towns where they lived.

We have elected five new members during the year and reinstated two more

Vienna seems to be the goal of many Burlington physicians this year Dr H. A. Durfee returned this fall from two months of study there and Dr Seth Martin returns this month Drs A. R. Hogan and A. L. Lerner are in Europe at present and Dr Paul French leaves for Vienna next week Dr O. N. Eastman has spent the winter in California and at the Mayo Clinic in Rochester Minn and Dr Sam Sparhawk has held an internship in obstetrics in the Los Angeles General Hospital during the past winter

During the November flood Dr T. S. Brown and Dr F. S. Kent and members of the staff of the Mary Fletcher Hospital and of the senior class in the Medical College distinguished themselves by prompt and efficient service in the flood swept towns

PAUL K. FRENCH, *Secretary*
H. S. F.

Dr and Mrs E. M. Nichols of Barton are receiving congratulations over the birth of their son Elwin Milton Nichols Jr born March 29th

ONLY ONE LEFT OUT

The health officer of Bridgewater reports that all school children in that town except one and all pre-school children over the age of six months have been treated with toxin-antitoxin to prevent diphtheria. The use of toxin-antitoxin is not compulsory and the treatment is not given without the consent of parents

The mother of the one child not treated is of foreign birth. In her native country she might not have as much freedom of choice in regard to protecting her children against disease as is accorded her in this country. While it is true that her child will be afforded a degree of protection because the neighboring children are protected against the disease it is also true that she is still incurring an unnecessary hazard

Altogether 88 of the 89 children in Bridgewater over the age of six months have received toxin-antitoxin. This means that a fraction less than 99 per cent. (98.87 per cent to be exact) of the children were so treated. Can any other town in Connecticut, or elsewhere for that matter show practically 99 per cent. of their children treated with toxin-antitoxin to protect them against diphtheria? If so the State Department of Health would like to have information about such town. So far as is now known Bridge-

RECENT DEATHS

Dr J. A. Bouche of Montpelier died March 14th in a Montreal hospital where he had been treated for several months for a complication of diseases

Dr Boucher was thirty-seven years of age

He located in Montpelier in 1916 and had a large general practice. He gave up practice at the time of the November flood although he had been ill for some time previous

He is survived by a wife and one son

Dr E. G. Sprague of Barre, Vermont well known specialist in eye, ear, nose and throat, died March 16th, at his home after an illness of about three months. Dr Sprague was born in Chelsea, Vermont, February 3, 1865. His parents moved to Brookfield when he was about two years of age. He was educated in the public schools of Brookfield, a graduate of St. Johnsbury Academy, entering the University of Vermont where he graduated in both the academic and medical departments

He first located in Rumney, N. H., where he did general practice for several years. He then decided to specialize and spent several months in New York, later going abroad for further study where he remained about a year. Returning to Vermont, he located in Barre where he built up an enviable practice.

In 1903 he married Hettie Cook of Rumney, New Hampshire who survives him also three children, Mrs. Elizabeth Newton, J. Hebard Sprague and Hettie Sprague all of Barre

Besides being a fine physician Dr Sprague was a cultured gentleman and a loyal friend.

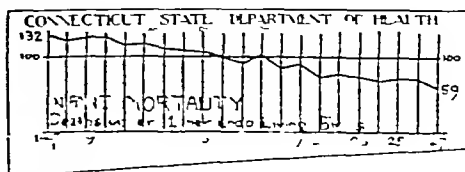
water holds first place in diphtheria immunization of its children. Will any other town challenge this position?

If an honor roll should be provided for all towns showing 95 per cent or more of their school children treated with toxin-antitoxin to prevent diphtheria, how many towns could have their names placed on such roll? It is not expected that many towns will reach the high mark set by Bridgewater but it is hoped that a number of them may show upwards of 95 per cent of their children protected. The names of towns doing such excellent pieces of work should be known to the citizens of other towns as an encouragement to them to do likewise. What town will be the next to let its light shine?—*Bulletin of the Connecticut Department of Health*

INFANT MORTALITY IN CONNECTICUT

Fifty-nine deaths under one year per one thousand living births is the lowest rate ever recorded in Connecticut

Infant death rates since 1907 are shown in the chart below



Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 14101

**EPIGASTRIC PAIN, VOMITING AND
DELIRIUM**

SURGICAL DEPARTMENT

An unmarried American stenographer twenty-five years old entered the hospital January 5 complaining of abdominal pain.

For forty-eight hours before admission she had had moderately severe epigastric pain. At the onset she vomited about a cupful of reddish brown blood. The following day and the morning of admission she vomited clear fluid. During the illness she had had fever, anorexia and marked weakness.

Her family history is good.

Thirteen years before admission she had thyroidectomy. Two years before admission she had appendicostomy for colitis. She had had periodic sensations of discomfort in the epigastrium, usually of a day's duration, which occurred coincidentally with menstrual cycles and followed complete cessation of menstruation in April, twenty months before admission. Since the onset of this her stools had had the gross characteristics of mucous colitis. Her catamenia had always been irregular. During the winter before admission she was despondent and attempted suicide with veronal. During the past few months her health had been good as compared with the past few years. She had gained weight.

Clinical examination showed a fairly well developed and nourished woman with pale skin and mucous membranes. An old scar on the anterior surface of the neck, well healed. Heart not enlarged. A soft blowing systolic murmur over the apex, not transmitted. Pulses not of good volume and tension. Blood pressure 130/70. Lungs normal. Abdomen somewhat distended, tympanic throughout, tender over the right upper quadrant and epigastrium, especially the former, on deep palpation. An old scar over the appendix with a small fistula. Slight purulent discharge. Vaginal examination unsatisfactory. Moderate tenderness in both fornices. Extremities, pupils and reflexes normal.

Urine at admission negative. The day of death the very slightest possible trace of al-

bumin, acetone positive, 6 to 10 leukocytes and 2 to 5 red cells per field (not a catheterized specimen), many granular casts. Blood 21,000 to 16,600 leukocytes, 82 per cent polynuclears, 20 per cent lymphocytes, hemoglobin 50 per cent, reds 3,560,000. Wasserman negative. Stool examination showed gross blood and bile.

X-ray The detail of the lung was obscured by respiratory motion. The right lung was slightly less radiant than the left, especially at the base.

Temperature 102° to 106.2°, rectal. Pulse 112 to 167. Respirations 24 to 37.

The patient was critically ill, semidelirious. She went rapidly downhill. The medical and surgical House staff and a medical consultant could make no diagnosis. January 7 she became comatose. A lumbar puncture showed normal dynamics. The spinal fluid showed 350 leukocytes, normal chemical contents. That day the patient died.

DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

It is rare to have thyroidectomy at twelve, but we have to take the statement as given.

The remark about appendicostomy and colitis is surprising. In the first place one does not expect to see a person who has colitis so severe that appendicostomy is done recover as this person seems to have recovered. In the second place it is spoken of later as mucous colitis. This makes me suspect that is what it was in the beginning. If so, appendicostomy was the worst thing they could have done.

NOTES ON THE PHYSICAL EXAMINATION

There ought to be more detail on the spinal fluid. We do not often get normal chemical contents with 350 leukocytes. I should think that fact of the leukocytes the most important fact that we have.

DIFFERENTIAL DIAGNOSIS

The complaint with which she came, abdominal pain and vomiting of reddish brown fluid supposed to be blood, does not easily associate itself with the final symptoms, especially with the lumbar puncture fluid. Knowing that she had had an appendicostomy we wonder if that and the adhesions might possibly have some connection with the abdominal symptoms, but I do not think the evidence is good. An appendicostomy ought to leave very little in the way of adhesions. In the second place her symptoms do not seem to be particularly in that region. There is nothing said about abdominal spasm. The abdomen is distended, tympanic and tender. She has nervous symptoms, semidelirium and coma. I should say the best ex-

planation is general infection in which the nervous system took part and which showed itself with digestive symptoms in the beginning, rather than to say that local abdominal disease was the main cause of her death. Of course it is perfectly possible that she had a general peritonitis and that the meningeal irritation or meningitis is secondary to that.

The count of red cells looks as if this illness had been going on more than forty-eight hours, for it does not seem probable that she had vomited enough blood to cause that anemia, and there is nothing else to explain it. But what illness she may have had for more than forty-eight hours I have no idea. We have no evidence, I should say, of any chronic nephritis, although we do not know the gravity of the urine.

DR RICHARD B KING It was perfectly normal.

DR W PEARCE COUES Do you think she could have taken some poison a few days before admission to the hospital in a suicidal attempt?

DR CABOT That would have caused her vomiting, but I do not see how we can easily link that up with the condition of the lumbar fluid or with the anemia. I do not know any poison that will cause such an anemia in two days. There is not any evidence of jaundice or anything like acute liver trouble. I do not see how we can say she has tuberculosis in any form or syphilis in any form.

A PHYSICIAN Can it be endocarditis?

DR CABOT The history must be very defective if that is true.

A PHYSICIAN She has a systolic murmur.

DR CABOT Apparently she was sick only forty-eight hours. If she had had endocarditis I should have been satisfied to explain the abdominal symptoms in that way, but I should say that we have no good basis for a diagnosis of endocarditis in any form.

A PHYSICIAN How do you explain the bloody vomitus and bloody stool?

DR CABOT We see a great many critically ill patients, especially on the surgical side, vomit reddish brown fluid. This happens in peritonitis often, but also in a great many cases in which we never find a cause. The stool examination showed gross blood, but we do not know as to the question of hemorrhoids. We have no rectal examination. She is said to have had a colitis, not however of the type that ordinarily shows gross blood. Possibly her anemia is due to old colitis. If she has lived here that colitis was probably not of the type likely to spread beyond the intestine. I do not believe that I can make a diagnosis.

DR KING She had a perfectly normal blood sugar and her CO₂ tension was about 40 volumes per cent. I saw her about twelve hours after she became comatose and thought she might be in diabetic coma because of the tremendous

hyperpnea which she was said to have had for some hours.

DR CABOT You do not know any more about that leukocyte count in the spinal fluid, do you?

DR KING No, sir.

DR CABOT That is the most definite fact we have. If only we had a little bit more!

DR TRACY B MALLORY There must have been a high percentage of polymorphonuclears.

DR CABOT What makes you think that?

DR MALLORY From our examination of the spinal fluid post mortem.

DR CABOT Let us say then that they are polymorphonuclears. That means acute meningitis. Is that all there is? No, because acute meningitis does not cause anemia, and she has it. I think we must say some form of acute meningitis. Beyond that my only guess is that there is also some form of sepsis, local or general.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Acute miliary tuberculosis

Tuberculous peritonitis

DR RICHARD C CABOT'S DIAGNOSIS

Acute meningitis

Sepsis, local or general

ANATOMIC DIAGNOSES

1 Primary fatal lesions

Septicemia, staphylococcus aureus

Staphylococcus meningitis

Miliary abscesses in heart, spleen and kidney

2 Secondary or terminal lesions

Chronic colitis

Focal necrosis of the adrenals

DR MALLORY The primary diagnosis was septicemia with staphylococcus aureus. It showed up in the blood culture. Numerous miliary abscesses were found in the spleen, heart and kidneys. The lungs contained an old infarct which must have been due to a much older process than this. No source or suggestion as to where it might have come from was found. The brain showed a definite purulent meningitis also due to the staphylococcus aureus. She did have a true chronic colitis without any gross ulcers but with very marked thickening of the wall of the sigmoid colon and a typical cellular infiltration which extended down through the mucosa and muscularis into the serosa. No source for the sepsis was found. Whether it was possibly an extension from the colitis, I cannot say. It hardly seems likely.

DR CABOT Is the organism of this form of colitis known, in your opinion?

DR MALLORY Not certainly. From a very considerable proportion of them we can recover streptococci, usually of the viridans type. A special diplococcus has been found in many cases

by Bergen of the Mayo clinic and he has also had very favorable results from specific vaccine therapy. I do not feel, however, that the etiology can be considered settled.

DR CABOT: Do you take it the colitis is the cause of the anemia?

DR MALLORY: The sepsis may have persisted very much longer than the history suggests. The kidney showed not only acute miliary abscesses situated around infectious thrombi in small blood vessels, but all stages of healing abscesses and all stages of septic infarcts. So that I think the process must have lasted several weeks without much question.

CASE 14102

LOWER ABDOMINAL PAIN, QUESTION OF TREATMENT

SURGICAL DEPARTMENT

An American insurance agent twenty-three years old entered the wards from the Emergency Ward December 23 for study of pain in the lower abdomen.

A year before admission he had two attacks similar to the present one and six months before admission a third. These attacks were accompanied by nausea and vomiting. None of them lasted more than a day. The night of December 21 he was awakened at midnight with severe epigastric pain radiating downward to the lower abdomen, more to the right. He was nauseated and induced vomiting. The pain kept him awake the rest of the night. The morning of December 22 his physician gave him morphia. He slept most of the day. In the evening the pain was sharper and more localized in the right lower quadrant. His temperature was elevated. He came to the Emergency Ward that evening.

His family and past histories are unimportant. He had always been quite healthy.

Clinical examination was negative except for slight injection of the anterior pillars of the throat and tenderness in the lower abdomen, more marked on the right side. Peristalsis was audible. There was slight spasm of the right rectus muscle. Over McBurney's area there was some hyperesthesia.

Before operation urine normal, leukocytes 15,600, temperature 103.2°, pulse 92, respirations normal.

Operation was done the day after admission to the Emergency Ward. The patient made a good recovery from ether. Two days later the pulse suddenly rose to 140. The patient was a little irrational and vomited twice. Gastric lavage yielded 57 ounces. The temperature and pulse rose steadily to 105° and 142 respectively. The general condition was very poor. Rectal examination was negative. The abdomen was tender, but there was no definite localization of

pus. December 30 500 cubic centimeters of blood was transfused. A blood culture was negative. The condition grew gradually worse. January 1 the patient was comatose. The sclerae were icteric. The abdomen was very rigid. There was surprisingly little drainage from the wound. That day he died.

DISCUSSION

BY EDWARD L. YOUNG, JR., M.D.

This seems like a perfectly good story in a young adult. Similar previous attacks of pain with nausea and vomiting, and the present attack of epigastric pain shifting to the right lower quadrant. I have never but once in an acute surgical abdomen seen an attack of pain which started in the epigastrium and shifted to the right lower quadrant which was anything but an acute appendix. The one exception was when an acute gall-bladder presented in the wound. The explanation was that the acute gall-bladder started the same reflex that the acute appendix generally does.

I think the use of morphia in a case like this is to be commented on in order to be condemned. It is not the thing to do in a situation like this, because it may not only mask symptoms so that an erroneous diagnosis may be made by the surgeon, but it may make the patient sleep comfortably through the day, as this patient apparently did, while the process itself goes on. If he had not had the morphia he would not perhaps have allowed himself to go as far as this without calling for help.

Here is a record which ought to arouse suspicion at once. A temperature of 103.2° is never due to an uncomplicated appendicitis. There are exceptions to all rules, but that is an exceedingly good rule to go on, because it either means a ruptured appendix or a sepsis spread elsewhere than in the appendix. Add to that a leukocytosis which is not as high as we should expect with a severe septic process, and it makes us wonder whether the diagnosis is wrong or whether it is a good deal worse than examination suggests.

Is there any other diagnosis to consider? Of course occasionally we meet an acute appendix which is only one manifestation of a general septicemia. There is nothing to make one think of a general sepsis here. Although it speaks of slight redness of the throat there is no other suggestion that he has had a chance for sepsis to originate in that region.

Could it be pneumonia? There is no question that in certain cases it is of the very greatest difficulty to distinguish between an acute abdomen and a central pneumonia with reflex pain in the abdomen. On the other hand I have never known in pneumonia such a clean cut story of epigastric pain shifting to the right lower quadrant as this man had. But the record says there

is only slight spasm of the right rectus muscle, and if there is a good deal of sickness one would expect a good deal of spasm. It has been going only about twelve hours, so that it is possible that it is pneumonia.

I do not see any other thing to consider. Perforated duodenal ulcer with the fluid trickling down to the right lower quadrant and giving pain with tenderness over the right lower quadrant is possible, but an acute perforation means a tremendous lot of spasm. It is the best example of a board-like abdomen that we have, practically always, and thus does not present that picture.

It seems to me the only thing to do is to operate for an acute appendix, with a very anxious feeling in the back of our heads as we do it.

DR CABOT: Would you make the usual incision, in the usual place?

DR YOUNG: I should. I should start with local anesthesia, to be changed to general if necessary when the diagnosis is confirmed.

DR G. S. SPEARE: He was operated upon the day after admission to the Emergency Ward, eighteen hours later. His temperature was high, and because of that we were doubtful whether it was appendicitis. It was 104° at entrance to the Emergency Ward. We sent him to the ward and operated the next day. The only sign indicating appendicitis was very slight tenderness in the right lower quadrant on deep pressure. There was no spasm. Rectal examination was negative.

DR YOUNG: Did the local signs change? Did you get more spasm?

DR SPEARE: They did not change very much. There was little spasm the next day.

DR YOUNG: And you did not find anything in the chest to justify X-ray?

DR SPEARE: No.

DR YOUNG: Because of course occasionally the X-ray is the only thing that will tell us in a central pneumonia. I have seen two or three cases where it was the only thing that would tell us whether it was a pneumonic or an abdominal process. I think I should operate with the feeling that it was an overwhelming infection, with an acute appendix as part of the process.

A SURGEON: Doesn't the normal respiration rate argue against pneumonia?

DR YOUNG: Yes. On the other hand it was about five years ago we had five cases that I saw myself where it was almost impossible to tell, and in two cases the X-ray was the only thing that did tell the difference. And one was four days after the onset of symptoms, and in that case the argument was that it would be impossible to have a pneumonia go four days without showing some signs. Yet it was there.

DR YOUNG'S PRE-OPERATIVE DIAGNOSIS

Septicemia

Acute appendicitis

PRE-OPERATIVE DIAGNOSIS

Acute appendicitis

OPERATION

Gas ether. Right rectus muscle retracting incision. The peritoneum was opened. The appendix was found pointing toward the pelvis with a kink under the ileocecal valve. It was dissected off its bed with the finger. The distal two-thirds was entirely gangrenous. The proximal third was not inflamed at all. There was no free fluid in the peritoneal cavity. The base of the appendix was ligated the mesentery cut clamped and tied and the appendix removed with carbolic knife and alcohol. The stump was buried with a purse string suture. A cigarette wick was put in the pelvis with an angulation at the place where the appendix lay. The wound was closed.

PATHOLOGICAL REPORT

An appendix 7 centimeters long. The wall is black and covered with a vascular membrane. Microscopic examination shows extensive hemorrhagic and polynuclear leukocytic infiltration of the entire wall with necrosis of the muscular layer and mucosa.

Gangrenous appendicitis

FURTHER DISCUSSION

This is the type that we see with an overwhelming infection,—a gangrenous process without free fluid in the abdomen—and if we cut open the appendix nothing but the gangrene,—the appendix not filled with pus.

Of course transfusion of blood is in itself not a cure for sepsis, but where sepsis has brought down the blood the addition of new blood may add just enough to the patient's fighting strength to let him pull through. I assume that is the basis on which it was done.

The icteric sclerae again suggest the spreading infection with liver involvement.

I think Dr. Mallory will tell us that there is a spreading peritonitis in the abdomen without much walling off, and I am inclined to think he will tell us there is a positive blood culture. I do not think there has been time for the multiple abscesses of the liver to develop.

DR CABOT: What proportion of the appendix cases you have seen have had sore throat or other respiratory infections?

DR YOUNG: I do not think I can put it in figures, but there is no question that there is a definite percentage who have had a sore throat or respiratory infection within a recent time. I think the appendicitis often is a metastatic infection, and I think it occasionally is just one

part of a general infection, and those are the cases where we are apt to get a fatal termination even though the appendix itself and the condition of the abdomen at the time of operation are not such that we expect it to be fatal

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Acute appendicitis with peritonitis
Septicemia
Abscess of liver

DR EDWARD L. YOUNG'S DIAGNOSIS

Septicemia
Gangrenous appendicitis
Spreading peritonitis

ANATOMIC DIAGNOSES

- 1 *Primary fatal lesion*
(Gangrenous appendicitis)
- 2 *Secondary or terminal lesions*
General peritonitis
- 3 *Historical landmark*
Operation wound, appendectomy

DR TRACY B. MALLORY The findings were exactly as Dr. Young predicted,—a generalized peritonitis. There was a positive blood culture—streptococcus hemolyticus—and no evidence of any liver abscess. I think his jaundice must have been hemolytic in character.

DR CABOT What brings about gangrene without pus in a case like this?

DR MALLORY I think there is usually pus microscopically. There may not be any gross amount.

DR YOUNG That is what I mean. There is no gross pus in many of these cases. There is no abscess around it, there is no distention. I saw a case last month. Two days before death the scrotum was gangrenous and there were large gangrenous areas on both thighs. He had a streptococcus infection starting in the throat.

DR CABOT Does that mean plugging of vessels by emboli?

DR MALLORY Only in part if at all. I think there is probably a direct action of bacterial toxins, and the extreme swelling and distention undoubtedly interfere with the circulation.

DR CABOT I think in relation to these cases we have come far enough away from the old times to be reminded of them. I happen to have been brought up in Brookline, where lived Dr. G. K. Sabine, who had about the best record for appendicitis cases of any man going. He never operated and he never lost a case. He took care of both of my brothers, one of whom I think now had a big abscess. His treatment was morphia, starvation, and everything that could be done to keep the mind as well as the body at rest. We say rightly, I suppose, today,

that it is criminal to give morphia and lock up things. He did just that thing, and I have known very few people who had as good a record as his.

DR YOUNG When they died what did he say they died of?

DR CABOT His people didn't die.

DR YOUNG I think it is a question whether a patient in a case such as this would have died of a general septicemia or of peritonitis. I think he would have died, but I am not sure that it would not have been a generalized septicemia rather than a peritonitis.

PRIZE WINNING PLAYS

The three prize-winning plays in the 1928 Massachusetts Health Playwriting Contest are 'The Starter' written by the Class of 1928 of the West Springfield High School, 'Soldiers of Peace' by Rita and Lester Radovsky of the B. M. C. Durfee High, Fall River, and 'Lost and Found' by the Sophomore B. Class of the Girls' Catholic High School, Malden. Honorable mention is made of 'Flood' written by the Drama Class of the Technical High School, Springfield and 'The Making of Mickey' by Barbara Clark of the Melrose High School. These three plays have been selected of the sixteen submitted by pupils of high schools in the State, for their health message and dramatic value. The prize-winning schools have been invited to bring their casts into Boston to present their plays at the Copley Theatre on Friday afternoon, April 27, at three o'clock. Following the presentation speeches will be made by the judges and the awards of the prizes made to the schools.

This is the fourth year of the Health Playwriting Contest conducted under the auspices of the Massachusetts Tuberculosis League. Mr. E. E. Clive, director of the Copley Theatre, Dr. Francis P. Denny, a health officer in Brookline, and Mr. Robert B. Kelso, secretary of the Boston Council of Social Agencies, compose the committee of judges. After the production the prize-winning plays will be forwarded to New York to be reviewed by a national board of judges in the National Health Playwriting Contest conducted by the National Tuberculosis Association. The prizes for the nation-wide winners will be awarded at the convention of that association to be held at Portland, Oregon, on June 18.

COORDINATION IN CANCER RESEARCH

An important conference was called by Surgeon General Cumming on April 9 with the object of obtaining cooperation and furthering the research into cancer by both Federal and private organizations. Three representatives of the Public Health Service attended and in addition eleven individuals representing private field of cancer research. A subcommittee of five was appointed to outline a definite program for cancer research and submit a report within two weeks. This committee consists of Dr. Francis Carter Wood, Columbia University; Dr. James B. Murphy, Rockefeller Institute; Dr. Warren Lewis, Carnegie Institute; Dr. W. H. Howell, Director of Hygiene, Johns Hopkins University; and Dr. Joseph W. Schereschewsky, of the Public Health Service.

The New England Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY
under the jurisdiction of the following named committee

For Three Years

JOHN W. BARTOL, M.D. FREDERICK T. LEED, M.D.
CHANNING FROTHINGHAM, M.D.

For Two Years

HOMER GAGE, M.D., Chairman EDWARD C. STREETER, M.D.
EDWARD W. TAYLOR, M.D.

For One Year

WILLIAM H. ROBERT, JR., M.D. ROWEN I. LEE, M.D.
ROBERT B. O'NEILL, M.D.

EDITORIAL STAFF

DAVID L. EDGALL, M.D. STEPHEN RUSHMORE, M.D.
RED HUNT, M.D. HANS ZINSSER, M.D.
JOHN P. SUTHERLAND, M.D. BENJAMIN WHITE, PH.D.
GEORGE R. MINOT, M.D. HENRY R. VIETS, M.D.
FRANK H. LANEY, M.D. ROBERT A. VIE, M.D.
SHIELDS WARREN, M.D.

WALTER P. BOWEN, M.D. Managing Editor

ASSOCIATE EDITORS

GEORGE G. SMITH, M.D. WILLIAM B. BREID, M.D.
JOSEPH GARLAND, M.D.

THE NEW HAMPSHIRE MEDICAL SOCIETY

PUBLICATION COMMITTEE

D. E. SULLIVAN, M.D. EMERY M. FITCH, M.D.
JOSEPH J. COBB, M.D.

THE VERMONT STATE MEDICAL SOCIETY

PUBLICATION COMMITTEE

WILLIAM G. RICKER, M.D. C. F. DALTON, M.D.
J. A. WARR, M.D.

SUBSCRIPTION TERMS \$6.00 per year in advance postage paid
for the United States Canada \$7.05 per year \$8.50 per year
for all foreign countries belonging to the Postal Union

Material for early publication should be received not later
than noon on Saturday. Orders for reprints must be sent to
the Journal office 126 Massachusetts Avenue

The Journal does not hold itself responsible for statements
made by any contributor

Communications should be addressed to The New England
Journal of Medicine 126 Massachusetts Avenue Boston Mass

A CHALLENGE TO THE DOCTORS OF MASSACHUSETTS

THIS week is devoted to a cancer campaign, the principal objective of which is to bring patients with cancer under competent medical supervision earlier to the end that more of the 5500 persons dying annually from this disease may be saved. It is conservatively estimated that 30 per cent, or about 1200, could be so saved if in each instance our present knowledge were adequately applied sufficiently early. The organized medical profession, the organized public and organized government are making an Herculean effort to arouse the adult public to their responsibility in this regard. Galvanized by the legislative program, a State cancer hospital has been opened and, what is much more significant, under the direction of the local medical profession cancer clinics have been opened in twelve cities outside of Boston. Probably never before in the history of the world have such readily accessible resources of such an average high quality been available against cancer.

But the indications are that for every person seeking advice from a clinic, three to five go to a doctor privately. The campaign slogan is "Go to your doctor or a cancer clinic." Is this advice sound?

Because of the catholicity of cancer, to tell a person of advancing years that he has no cancer is probably one of the most taxing diagnostic problems of all medicine. When you consider that on the average each physician in the State sees two cancer cases a year, general expertness in recognizing this disease is impossible. But it is fair to expect the average thoughtful physician to reassure the 75 per cent of persons which the clinics show are seeking advice without having the disease, and to make sure that those in whom there is doubt go promptly to where an authoritative opinion can be given.

Again it has been said that any cancer program is doomed because of the discouragement of the public. But in some instances the public discouragement is less profound than that of the profession. These doctors are frequently thinking in terms of results obtained ten or more years ago. They must bestir themselves and become informed as to what modern surgery, X-ray and radium are accomplishing in certain types of cancer.

Lastly there is the group, unfortunately found in every large profession, who are not alive to their great opportunity and obligations. These are not found at the medical meetings and clinics arranged all over the State this week. These contribute to that too frequent scandal of diagnosing rectal cancer as hemorrhoids without an examination. These are loud in their criticism of all orderly efforts of the health authorities. These give substance to any popular contempt for our profession. To fully meet the challenge of the cancer campaign we must either reform or remove these from our midst.

This challenge of adequate service to those who seek us early is the most sobering and most stimulating that has ever been thrown down to any profession.

THE RELATIONS OF THE MEDICAL SOCIETY TO HOSPITALS

FOR several years there was a section of Hospital Administration which held its sessions at the Annual Meeting of the Massachusetts Medical Society. Recently, however without any formal action this Section has ceased to function. Possibly there was no adequate need of a special section to consider problems of hospital administration. It was, however a section which united the Society with those outside the profession. It is now proposed to do away with another tie between the Society and the public in the abolition of the Committee on Public Instruction. The JOURNAL does not undertake to point out the best method or methods of bringing

part of a general infection, and those are the cases where we are apt to get a fatal termination even though the appendix itself and the condition of the abdomen at the time of operation are not such that we expect it to be fatal

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Acute appendicitis with peritonitis
Septicemia
Abscess of liver

DR EDWARD L. YOUNG'S DIAGNOSIS

Septicemia
Gangrenous appendicitis
Spreading peritonitis

ANATOMIC DIAGNOSES

- 1 *Primary fatal lesion*
(Gangrenous appendicitis)
- 2 *Secondary or terminal lesions*
General peritonitis
- 3 *Historical landmark*

Operation wound, appendectomy

DR TRACY B. MALLORY The findings were exactly as Dr Young predicted,—a generalized peritonitis. There was a positive blood culture—streptococcus hemolyticus—and no evidence of any liver abscess. I think his jaundice must have been hemolytic in character.

DR CABOT What brings about gangrene without pus in a case like this?

DR MALLORY I think there is usually pus microscopically. There may not be any gross amount.

DR YOUNG That is what I mean. There is no gross pus in many of these cases. There is no abscess around it, there is no distention. I saw a case last month. Two days before death the serotum was gangrenous and there were large gangrenous areas on both thighs. He had a streptococcus infection starting in the throat.

DR CABOT Does that mean plugging of vessels by emboli?

DR MALLORY Only in part if at all. I think there is probably a direct action of bacterial toxins, and the extreme swelling and distention undoubtedly interfere with the circulation.

DR CABOT I think in relation to these cases we have come far enough away from the old times to be reminded of them. I happen to have been brought up in Brookline, where lived Dr G. K. Sabine, who had about the best record for appendicitis cases of any man going. He never operated and he never lost a case. He took care of both of my brothers, one of whom I think now had a big abscess. His treatment was morphia, starvation, and everything that could be done to keep the mind as well as the body at rest. We say rightly, I suppose, today,

that it is criminal to give morphia and lock up things. He did just that thing, and I have known very few people who had as good a record as his.

DR YOUNG When they died what did he say they died of?

DR CABOT His people didn't die.

DR YOUNG I think it is a question whether a patient in a case such as this would have died of a general septicemia or of peritonitis. I think he would have died, but I am not sure that it would not have been a generalized septicemia rather than a peritonitis.

PRIZE-WINNING PLAYS

The three prize-winning plays in the 1928 Massachusetts Health Playwriting Contest are "The Starter" written by the Class of 1928 of the West Springfield High School, "Soldiers of Peace" by Rita and Lester Radovsky of the B. M. C. Durfee High School, and "Lost and Found" by the Sophomore B Class of the Girls Catholic High School, Malden. Honorable mention is made of "Flood" written by the Drama Class of the Technical High School, Springfield and "The Making of Mickey" by Barbara Clark of the Melrose High School. These three plays have been selected of the sixteen submitted by pupils of high schools in the State, for their health message and dramatic value. The prize-winning schools have been invited to bring their casts into Boston to present their plays at the Copley Theatre on Friday afternoon, April 27, at three o'clock. Following the presentation speeches will be made by the judges and the awards of the prizes made to the schools.

This is the fourth year of the Health Playwriting Contest conducted under the auspices of the Massachusetts Tuberculosis League. Mr. E. E. Clive, director of the Copley Theatre, Dr. Francis P. Denny, a health officer in Brookline, and Mr. Robert B. Kelso, secretary of the Boston Council of Social Agencies, compose the committee of judges. After the production the prize-winning plays will be forwarded to New York to be reviewed by a national board of judges in the National Health Playwriting Contest conducted by the National Tuberculosis Association. The prizes for the nation-wide winners will be awarded at the convention of that association to be held at Portland, Oregon on June 18.

COORDINATION IN CANCER RESEARCH

An important conference was called by Surgeon General Cumming on April 9 with the object of obtaining cooperation and furthering the research into cancer by both Federal and private organizations. Three representatives of the Public Health Service attended and in addition eleven individuals representing private field of cancer research. A subcommittee of five was appointed to outline a definite program for cancer research and submit a report within two weeks. This committee consists of Dr. Francis Carter, Wood Columbia University; Dr. James B. Murphy, Rockefeller Institute; Dr. Warren Lewis, Carnegie Institute; Dr. W. H. Howell, Director of Hygiene, Johns Hopkins University; and Dr. Joseph W. Schereschewsky of the Public Health Service.

The New England Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY
and the jurisdiction on of the following named committee

For Three Years

JOHN W. BARTOL, M.D. FREDERICK T. LEE, M.D.
CHANNING FROTHINGHAM, M.D.

For Two Years

HOMER GAGE, M.D., Chairman EDWARD C. STREETE, M.D.
EDWARD W. TAYLOR, M.D.

For One Year

WILLIAM H. ROBERT, JR., M.D. ROBERT I. LEE, M.D.
ROBERT B. OSGOOD, M.D.

EDITORIAL STAFF

DAVID L. EDWARDS, M.D. STEPHEN RUSHMORE, M.D.
RED HUNT, M.D. HANF ZINZLER, M.D.
JOHN P. SCHRIERMAN, M.D. BENJAMIN WHITE, PH.D.
GEORGE R. MONT, M.D. HENRY R. VITE, M.D.
FRANK H. LAHEY, M.D. ROBERT A. VITE, M.D.
SHIELDS WARREN, M.D.

WALTER P. BOWEN, M.D. Managing Editor

ASSOCIATE EDITORS

GEORGE G. SMITH, M.D. WILLIAM E. BREED, M.D.
JOSEPH GARLAND, M.D.

THE NEW HAMPSHIRE MEDICAL SOCIETY

PUBLICATION COMMITTEE

D. E. SPILLMAN, M.D. EMERY M. FITCH, M.D.
JOSEPH J. COBB, M.D.

THE VERMONT STATE MEDICAL SOCIETY

PUBLICATION COMMITTEE

WILLIAM G. RICKER, M.D. C. F. DALTON, M.D.
J. A. WARR, M.D.

Subscription Terms \$6.00 per year in advance postage paid
for the United States Canada \$7.00, per year \$8.00 per year
for all foreign countries belonging to the Postal Union

Material for early publication should be received not later
than noon on Saturday. Orders for reprints must be sent to
the Journal office 126 Massachusetts Avenue

The Journal does not hold itself responsible for statements
made by any contributor

Communications should be addressed to The New England
Journal of Medicine 126 Massachusetts Avenue Boston Mass

A CHALLENGE TO THE DOCTORS OF MASSACHUSETTS

THIS week is devoted to a cancer campaign, the principal objective of which is to bring patients with cancer under competent medical supervision earlier to the end that more of the 5500 persons dying annually from this disease may be saved. It is conservatively estimated that 30 per cent, or about 1200, could be so saved if in each instance our present knowledge were adequately applied sufficiently early. The organized medical profession, the organized public and organized government are making an Herculean effort to arouse the adult public to their responsibility in this regard. Galvanized by the legislative program, a State cancer hospital has been opened and, what is much more significant, under the direction of the local medical profession cancer clinics have been opened in twelve cities outside of Boston. Probably never before in the history of the world have such readily accessible resources of such an average high quality been available against cancer.

But the indications are that for every person seeking advice from a clinic, three to five go to a doctor privately. The campaign slogan is "Go to your doctor or a cancer clinic." Is this advice sound?

Because of the catholicity of cancer, to tell a person of advancing years that he has no cancer is probably one of the most taxing diagnostic problems of all medicine. When you consider that on the average each physician in the State sees two cancer cases a year, general expertness in recognizing this disease is impossible. But it is fair to expect the average thoughtful physician to reassure the 75 per cent of persons which the clinics show are seeking advice without having the disease, and to make sure that those in whom there is doubt go promptly to where an authoritative opinion can be given.

Again it has been said that any cancer program is doomed because of the discouragement of the public. But in some instances the public discouragement is less profound than that of the profession. These doctors are frequently thinking in terms of results obtained ten or more years ago. They must bestir themselves and become informed as to what modern surgery, X-ray, and radium are accomplishing in certain types of cancer.

Lastly there is the group, unfortunately found in every large profession, who are not alive to their great opportunity and obligations. These are not found at the medical meetings and clinics arranged all over the State this week. These contribute to that too frequent scandal of diagnosing rectal cancer as hemorrhoids without an examination. These are loud in their criticism of all orderly efforts of the health authorities. These give substance to any popular contempt for our profession. To fully meet the challenge of the cancer campaign we must either reform or remove these from our midst.

This challenge of adequate service to those who seek us early is the most sobering and most stimulating that has ever been thrown down to any profession.

THE RELATIONS OF THE MEDICAL SOCIETY TO HOSPITALS

FOR several years there was a section of Hospital Administration which held its sessions at the Annual Meeting of the Massachusetts Medical Society. Recently however without any formal action this Section has ceased to function. Possibly there was no adequate need of a special section to consider problems of hospital administration. It was, however, a section which united the Society with those outside the profession. It is now proposed to do away with another tie between the Society and the public in the abolition of the Committee on Public Instruction. The JOURNAL does not undertake to point out the best method or methods of bringing

about co operation between physicians and the public and of laying before the public the advances and the present state of modern scientific medicine. It is plain, however, that by some means or other this is essential if the Society is to fulfill its obligations. The opportunities open to the Staffs of hospitals to co operate with their Trustees in giving the public a more accurate understanding of medical knowledge, of our problems and our triumphs and failures have been discussed recently in the issues of the JOURNAL. May it not be wise for the officers of the Society to consider whether a revival of the Section of Hospital Administration is a satisfactory manner of stimulating interest along the lines suggested. Certainly some method of bringing to others the useful experiences of any hospital is most desirable.

THE HEADQUARTERS FOR THE MASSACHUSETTS MEDICAL SOCIETY

WHEN the Berkshire District invited the Massachusetts Medical Society to hold its Annual Meeting in Pittsfield it started a movement which has already gone far toward welding together the physicians of the State and which promises to bring into closer community of interest the entire medical profession of New England.

It is plain that the interests of no Section differ in any way from the interests of every other. The strength or weakness of any District Society affect the State Society. The interests of all the Districts are common. The strength and activities of each have grown along with those of the parent Society.

The need of adequate headquarters has become imperative if the Society and its constituent Districts are to do their full duty to the Fellows and to the Commonwealth. The inspiration to secure such headquarters has come from the Springfield President of the Society.

Following out the suggestions made at a recent meeting of the officers of the eastern Districts a circular explaining the purpose of the Committee on Headquarters is being sent to each Fellow. Each District President and Secretary will form the nucleus of a subcommittee which will be large enough to permit every Fellow of the District to be interviewed by a member of the Committee. In one District one committee man has been appointed for every five Fellows. Thus no undue burden is placed on any member of the Committee. The response already made is most enthusiastic. Every Fellow will have the opportunity to give what he feels able to contribute no matter how large or small this sum may be.

The State wide recognition of the need of adequate headquarters in Boston is shown by the fact that before formal requests for contributions have been made several thousand dol-

lars have been offered from Springfield and Fall River.

Once again the Berkshire District has taken the lead. The first actual contribution paid into the hands of the Treasurer is one of five hundred dollars given as a memorial to the late Dr Frank K. Paddock a former President of the Massachusetts Medical Society.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

GREENOUGH, ROBERT B. A.B., M.D. Harvard Medical School 1896. F.A.C.S. Visiting Surgeon Massachusetts General Hospital, Assistant Professor of Surgery, Harvard Medical School, Director, Cancer Commission of Harvard University, Surgeon in Charge, Collis P. Huntington Memorial Hospital. His subject is "Cancer." Page 477. Address 8 Marlborough Street, Boston.

LOMBARD, HERBERT L. A.B., M.P.H., M.D. Bowdoin, 1915. Epidemiologist and Chief of the Cancer Section, Massachusetts Department of Public Health. Address 546 State House, Boston. Associated with him is

DOERING, CARL R. A.B., C.P.H., D.Sc., M.D. Baylor University College of Medicine, 1921. Instructor in Vital Statistics, Harvard School of Public Health. Address 55 Van Dyke Street, Boston. Their subject is "Cancer Studies in Massachusetts. 2. Habits, Characteristics and Environment of Individuals With and Without Cancer." Page 481.

JONES, DANIEL FISKE. A.B., M.D. Harvard Medical School, 1896. F.A.C.S. Surgeon in Chief East Surgical Service, Massachusetts General Hospital, Surgeon, N.E. Deaconess Hospital, Surgeon-in-Chief, Palmer Memorial Hospital, Associate in Surgery, Harvard Medical School. His subject is "The Early Diagnosis of Carcinoma of the Rectum." Page 487. Address 195 Beacon Street, Boston.

CHEEVER, DAVID. A.B., M.D. Harvard Medical School, 1901. F.A.C.S. Associate Professor of Surgery, Harvard Medical School, Surgeon to the Peter Bent Brigham Hospital, Boston. His subject is "Carcinoma of the Gastrointestinal Tract." Page 488. Address Peter Bent Brigham Hospital, Boston.

SMITH, GEORGE GILBERT. A.B., M.D. Harvard Medical School 1908. F.A.C.S. Urologist, Massachusetts General Hospital and Palmer Memorial Hospital, Surgeon, Huntington Memorial Hospital. His subject is "Malignant Diseases of the Genito-urinary Tract." Page 496. Address 6 Commonwealth Avenue, Boston.

DALAND, ERNEST M. A.B., M.D. Harvard Medical School, 1918. F.A.C.S. Chief of Staff,

Pondville Hospital Norfolk, Surgeon Collis P Huntington Memorial Hospital, Surgeon to Out-Patients, Massachusetts General Hospital His subject is "Cancer Case Histories" Page 499 Address 483 Beacon Street, Boston

WYMAN, EDWIN T M D Tufts College Medical School, 1911 Instructor in Pediatrics Harvard Medical School, Assistant Physician Children's and Infants' Hospitals, Boston His subject is "Use of Ultra Violet Rays in Treatment With Special Reference to Children" Page 510 Address 483 Beacon Street, Boston

GRANGER, FRANK B A B, M D Harvard Medical School, 1902 Instructor of Physical Therapeutics Harvard Graduate School of Medicine, Physician-in-Chief, Department Physical Therapeutics Boston City Hospital, Lecturer in Physical Therapeutics, Tufts Medical School His subject is "The Use and Abuse of Physical Therapeutics" Page 514 Address 520 Commonwealth Avenue, Boston

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY
Foster S Kellogg M D Frederick L Good, M D
Chairman Secretary
Frederick J Lynch M D., Clerk

Use of Pituitrin During Pregnancy

Dr Frederick J Lynch, Clerk,
Section of Obstetrics and Gynecology,
126 Massachusetts Avenue
Boston Massachusetts

Dear Dr Lynch

The Obstetric column appearing in the *Boston Medical and Surgical Journal* of November 10 1927 contains the statement with regard to the use of Pituitrin during pregnancy and labor which should not be passed by unchallenged This is the statement that pituitrin may be used to start patients in labor when indications arise in the last few weeks of pregnancy, or to induce labor in patients who are overdue and developing large babies The method advised is a modification of the technique described by Watson with an ounce of castor oil given by mouth, followed at one hourly intervals by ten grains of quinine a suds enema and ten grains of quinine respectively if labor does not start within twelve hours pituitrin should be given intramuscularly in 0.5 c.c doses every half hour until labor starts or until six doses have been given

This method is open to the two following objections in so far as the use of pituitrin is concerned Either it may have no effect, in which case no harm will have been done or the pituitrin may cause prolonged and tempestuous uterine contractions with definite resulting danger to the mother from the possibility of uterine rupture and to the baby from interference with the placental circulation The writer has seen one such case in which the method was tried in a toxemic patient Following the first injection of pituitrin the uterus went into a prolonged tetanic contraction lasting over five minutes while the fetal heart dropped to 60 full etherization was necessary to relax the uterus and allow the placental circulation to become effective again La-

bor was eventually induced by insertion of a Voorhees bag

It is not to be expected that the Obstetric column will contain statements with which its readers will agree at all times Its statements, however, should err if at all on the side of conservatism and of methods of tested efficacy Watson's method can hardly be claimed to have given the results in the hands of others that the author himself claims for it and it must therefore be looked upon as still unproved

Yours truly

THOS R GOETHALS

In answer to this letter we wish to say, that the writer is perfectly correct in calling attention to his unfortunate experience in using pituitrin to induce labor

The medical public used pituitrin freely and in improper doses when it first appeared and many occurrences of a nature similar to the one reported happened Practitioners were then informed and students were instructed never to use pituitrin except in the third stage Gradually as the preparation of the drug became standardized and its effects better known, the indication was advanced to the second stage in multiparous patients with full cervical dilatation and no bony disproportion Now, many obstetricians are even using it to stimulate labor in a lagging first stage and to induce labor The dosage of 0.5 c.c advocated by Watson, although used by him in a large number of cases without untoward result, does seem a little high and we prefer to use the drug in doses of 0.3 c.c

It is true that an occasional patient will have an idiosyncrasy to a drug and react differently to it than other individuals, the same as is the case with morphia or scopolomine The effect of pituitrin is evanescent and the action can be inhibited by the administration of ether or chloroform It is not the contention of the advocates of the use of pituitrin that its employment for inducing labor is a one hundred per cent harmless procedure any more than are the other methods, viz, bagging, the introduction of bougies or the rupturing of the membranes, with their possibility of introducing infection

The cases must be properly chosen and the procedure carried out under the observation of the attendant If the uterine contractions become too strong or of a tetanic nature, the treatment above-mentioned should be administered The use of the drug in a toxic patient, may cause some difficulty, for two reasons First, because it raises the blood pressure Second, the toxic uterus is apt to be "cranky" that is, the first stage pains occur irregularly and are of different intensity It is with this condition that tetanic contraction of the uterus and separation of the placenta is most frequently associated The patient with a borderline pelvis, in whom the question of the necessity of resorting to a Caesarian Section is present, and who has arrived at term, is the chief indication for its use, in our opinion In this instance, it is desirable

to see what the case will do in labor. The ability of the baby's head to mold, the amount of "give" of the pelvic ligaments and the character of the uterine contractions are variable factors and can only be determined after the case is in actual labor. Any of the other methods of induction would preclude the possibility of a subsequent Caesarian Section.

The occasions for starting patients in labor are few and the cases should be carefully chosen. We do not wish to give the impression that the use of pituitrin to induce labor is an entirely harmless procedure. Also, we were not advocating its employment as the method of choice for inducing labor, but in discussing the purposes of pituitrin in obstetrics, called attention to the fact that this was one of its uses.

Questions of a similar nature to the foregoing will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

BOSTON MEDICAL LIBRARY

WILLIAM HARVEY (1578-1657)

THE medical world is very properly taking notice this year of the 300th anniversary of the publication of "*Exercitatio Quatomica de Motu Cordis et Sanguine in Animalibus*", Harvey's great work on the circulation. The significance of this work and at the same time the occasion for celebrating its tercentenary is the fact that it represented the beginnings not only of modern physiology but was one of the first examples of the application of scientific principles to the study of medicine. The authority of Galen, which had dominated medical thought for 1300 years was first seriously shaken and though Vesalius, Fabricius, Cervetus and Sylvius has made gestures to this end, no finished study had been published that was destined to so seriously influence subsequent thought as did this book of Harvey. Had not the influence of the Roman Church in Catholic countries and certain of the leaders in the Reformation in others exerted such a restraint upon scholarship it is probable that what Harvey is credited with having initiated might have had a somewhat earlier birth. In England opposition from such sources was not at this time so potent. Harvey was born near Folkstone, England in 1578. He was graduated from Caius College at Cambridge in 1597 and having decided to study medicine made his way to Padua the most renowned institution for the pursuit of medical studies at that time. Here he came under the instruction of Fabricius who was teaching anatomy there, certain of whose observations he was later to elaborate and perfect. From here he was given

his diploma in medicine in 1602. He then returned to England where he started practice, was soon (1607) admitted to the College of Surgeons and by 1609 was occupying a position of some importance at St Bartholomew's Hospital. He was widely read in the classics of medicine, was an admirer of Aristotle and Galen and quotes the former advising the study of comparative anatomy as a means of making clearer that of the human body. In 1615 he was chosen Lumleian lecturer at the College of Physicians and in April of 1616 he gave the first published expression in the form of lectures of his views on the circulation of the blood which however were not published in book form until 1628. His writings indicate that in the pursuit of his studies in anatomy he had dissected about eighty subjects. He had the work of Vesalius, Columbus, Fallopius and others at his fingers ends. He quotes Aristotle more frequently than any other author and after him Galen, for whom he apparently had professional respect without much personal admiration. His familiarity with Horace and Virgil among the Latin poets and with Caesar and Cicero was often shown. He had read St Augustine and was well grounded in Bible study. In 1618 he was Physician Extraordinary to King James I with a promise of appointment to be Physician in ordinary at the next vacancy. His book on the circulation excited considerable discussion both at home and abroad but no where was there claim that any other was entitled to priority of discovery. He took trips abroad by order of the King, as physician to certain of the Royalty. He is said to have been present at the battle of Edgehill where he was in charge of the Prince of Wales and the Duke of York and sat on the side lines reading a book during the progress of the battle. He had a considerable practice, was very industrious in prosecuting his studies and achieved high position among the physicians of his day. He refused election to the presidency of the College of Surgeons on account of his age. He suffered much from the gout and it was during an attack of this malady that he died on June 3, 1657. He is buried in a memorial chapel at Hampstead Church, built by the College of Surgeons.

Such of his works as the Library possesses will be exhibited during the week of April 30th.

FRACTURES OF THE CARPAL SCAPHOID

In spite of the fact that there have been repeated warnings in medical literature to the effect that sprains of the wrist are frequently far more serious than they, at the first blush, appear the profession is singularly unmindful of these warnings either because personal experience has not enforced them or because familiarity with medical literature has been lacking. For this reason during the week of April 30th, there will be found on display in Holmes

Hall some of the more significant literature upon this subject. The last word has probably not been uttered in regard to this condition. It has not been determined why the scaphoid of all the bones of the carpus, is the most frequently broken, why it is so loath to unite when it is, no matter what method of management is employed and what is the explanation of the occasional bipartite characters of its make up, none of these matters have ever been satisfactorily accounted for. The fact that there are apparently two centers of ossification in this bone quite frequently may be the answer to some, if not all, of these questions. The outstanding point that seems to need emphasis is that trauma to the wrist, however trivial, may result in a fracture and in making an examination of this region neglect to take this into consideration may result in embarrassment.

MISCELLANY

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS

MARCH 1928

GENERAL PREVALENCE

The total reported incidence of communicable diseases for March was very high due principally to the prevalence of measles.

As was the case for February the incidence of measles was by far the highest of any March in the history of the Department. There has been no evidence of a decline as yet. The incidence of mumps was rather high.

The reported incidence of diphtheria scarlet fever pulmonary tuberculosis lobar pneumonia German measles and whooping cough was within endemic limits.

In February a new low record for typhoid fever for that month was reported. Again in March a new

low record has been reached. It is the lowest record for any month in any year. The incidence is 35 per cent lower than the previous best March record in 1926. The first quarter of the year shows a reduction of 20 per cent from the previous low first quarter in 1926.

Fewer cases of influenza were reported than in any previous March. The incidence of poliomyelitis was low.

PARE DISEASES

Actinomyces was reported from Lynn 1 total, 1. *Anterior poliomyelitis* was reported from Boston 1 Cambridge 1 Hopkinton 1 Somerville 1 Wakefield 1 total 5.

Anthrax was reported from Haverhill 1 total 1. *Dog bite requiring antirabic treatment* was reported from Ashland 1 Boston 16 Braintree 1 Chelmsford 1 Hanson 1 Lowell 17 Lynn 1 Mansfield 1 Marblehead 1 Newton 3 North Attleboro 1 Peabody 1 Revere 8 Southbridge 3 Stoughton 2 Waltham 1 Winchester 1 Winthrop 4 Worcester 6 total 73.

Encephalitis lethargica was reported from Weymouth 1 total 1.

Epidemic cerebrospinal meningitis was reported from Adams 1 Boston 4 Easthampton 1 Greenfield 1 Lowell 1 Northampton 2 Somerville 1 Springfield 1 Worcester 1 total 13.

Pellagra was reported from Boston 1 total 1.

Septic sore throat was reported from Beverly 1 Braintree 1 Boston 3 Cambridge 5 Chelsea 1 Lynn 2 Plymouth 1 Somerville 1 total 15.

Trachoma was reported from Boston 4 Chelsea 1 Fitchburg 1 Worcester 1 total 7.

PROPOSED NATIONAL INSTITUTE OF HEALTH

Last year the Federal Government expended more than \$13,000,000 in fighting plant diseases and pests more than \$8,000,000 in fighting the diseases of animals and about \$43,000 for the research department of the Public Health Service. In preparing an argument in favor of an intensive study into human diseases the Public Health Authorities estimate that

MONTHLY REPORT OF CERTAIN COMMUNICABLE DISEASES

DISEASE	Cases in Entire Population			Epidemic Index	Case Rates per 100,000 Pop.		
	Mar. 1928	Mar. 1927	Procedemic Index		Mar. 1928	Mar. 1927	Expected Rates**
ALL CAUSES	15,906	10,422	-	-	367.8	244.1	-
Ant. Poliomyelitis	5	3	12*	.4**	.1	1	3
Diphtheria	411	429	447*	.9**	9.5	10.0	10.3
Measles	8,227	1,297	4,234*	1.8**	190.2	30.4	97.9
Pneumonia, Lobar	617	563	658*	.9**	14.3	13.2	15.9
Scarlet Fever	1,408	2,517	1,324*	1.1**	32.6	59.0	30.6
Tuberculosis, Pul.	435	490	365*	1.2**	10.1	11.5	8.4
Typhoid Fever	13	44	20*	.7**	.3	1.0	5
Whooping Cough	1,198	760	1,094*	1.2**	27.7	17.8	25.3
Chicken Pox	974	1,167	-	-	22.6	27.3	-
German Measles	111	68	-	-	2.6	1.6	-
Influenza	50	89	-	-	1.2	2.1	-
Mumps	1,496	2,027	-	-	34.6	47.5	-
Tuberculosis, O. F.	82	61	-	-	1.9	1.4	-

*This index is an attempt to estimate the number of cases based on the trend during the past years which can be expected to occur and is for the purpose of comparison with the number of cases which actually did occur.

This ratio expresses how prevalent the disease is compared with the index mentioned above. 1.0 indicates that the actual number of cases equals the expected number. A larger

number means a greater prevalence and a smaller number a lesser prevalence than expected. Thus 2.0 would indicate twice the expected number of cases and .5 half the expected number of cases. The method used to determine the index is described in the August 15, 1927 issue of the BOSTON MEDICAL AND SURGICAL JOURNAL.

Calculated from the Procedemic Index

to see what the case will do in labor. The ability of the baby's head to mold, the amount of "give" of the pelvic ligaments and the character of the uterine contractions are variable factors and can only be determined after the case is in actual labor. Any of the other methods of induction would preclude the possibility of a subsequent Caesarian Section.

The occasions for starting patients in labor are few and the cases should be carefully chosen. We do not wish to give the impression that the use of pituitrin to induce labor is an entirely harmless procedure. Also, we were not advocating its employment as the method of choice for inducing labor, but in discussing the purposes of pituitrin in obstetrics, called attention to the fact that this was one of its uses.

Questions of a similar nature to the foregoing will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

BOSTON MEDICAL LIBRARY

WILLIAM HARVEY (1578-1657)

THE medical world is very properly taking notice this year of the 300th anniversary of the publication of "*Exercitatio Quatomica de Motu Cordis et Sanguine in Animalibus*", Harvey's great work on the circulation. The significance of this work and at the same time the occasion for celebrating its tercentenary is the fact that it represented the beginnings not only of modern physiology but was one of the first examples of the application of scientific principles to the study of medicine. The authority of Galen, which had dominated medical thought for 1300 years was first seriously shaken and though Vesalius, Fabricius, Cervetus and Sylvius has made gestures to this end, no finished study had been published that was destined to so seriously influence subsequent thought as did this book of Harvey. Had not the influence of the Roman Church in Catholic countries and certain of the leaders in the Reformation in others exerted such a restraint upon scholarship it is probable that what Harvey is credited with having initiated might have had a somewhat earlier birth. In England opposition from such sources was not at this time so potent. Harvey was born near Folkstone, England in 1578. He was graduated from Caius College at Cambridge in 1597 and having decided to study medicine made his way to Padua the most renowned institution for the pursuit of medical studies at that time. Here he came under the instruction of Fabricius who was teaching anatomy there, certain of whose observations he was later to elaborate and perfect. From here he was given

his diploma in medicine in 1602. He then returned to England where he started practice, was soon (1607) admitted to the College of Surgeons and by 1609 was occupying a position of some importance at St. Bartholomew's Hospital. He was widely read in the classics of medicine, was an admirer of Aristotle and Galen and quotes the former advising the study of comparative anatomy as a means of making clearer that of the human body. In 1615 he was chosen Lumleian lecturer at the College of Physicians and in April of 1616 he gave the first published expression in the form of lectures of his views on the circulation of the blood which however were not published in book form until 1628. His writings indicate that in the pursuit of his studies in anatomy he had dissected about eighty subjects. He had the work of Vesalius, Columbus, Fallopius and others at his fingers ends. He quotes Aristotle more frequently than any other author and after him Galen, for whom he apparently had professional respect without much personal admiration. His familiarity with Horace and Virgil among the Latin poets and with Caesar and Cicero was often shown. He had read St. Augustine and was well grounded in Bible study. In 1618 he was Physician Extraordinary to King James I with a promise of appointment to be Physician in ordinary at the next vacancy. His book on the circulation excited considerable discussion both at home and abroad but no where was there claim that any other was entitled to priority of discovery. He took trips abroad by order of the King, as physician to certain of the Royalty. He is said to have been present at the battle of Edgehill where he was in charge of the Prince of Wales and the Duke of York and sat on the side lines reading a book during the progress of the battle. He had a considerable practice, was very industrious in prosecuting his studies and achieved high position among the physicians of his day. He refused election to the presidency of the College of Surgeons on account of his age. He suffered much from the gout and it was during an attack of this malady that he died on June 3, 1657. He is buried in a memorial chapel at Hampstead Church, built by the College of Surgeons.

Such of his works as the Library possesses will be exhibited during the week of April 30th.

FRACTURES OF THE CARPAL SCAPHOID

In spite of the fact that there have been repeated warnings in medical literature to the effect that sprains of the wrist are frequently far more serious than they, at the first blush, appear the profession is singularly unmindful of these warnings either because personal experience has not enforced them or because familiarity with medical literature has been lacking. For this reason during the week of April 30th, there will be found on display in Holmes

Hall some of the more significant literature upon this subject. The last word has probably not been uttered in regard to this condition. It has not been determined why the scaphoid, of all the bones of the carpus, is the most frequently broken, why it is so loath to unite when it is, no matter what method of management is employed and what is the explanation of the occasional bipartite characters of its make up, none of these matters have ever been satisfactorily accounted for. The fact that there are apparently two centers of ossification in this bone quite frequently may be the answer to some, if not all of these questions. The outstanding point that seems to need emphasis is that trauma to the wrist, however trivial, may result in a fracture and in making an examination of this region neglect to take this into consideration may result in embarrassment.

MISCELLANY

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS

MARCH 1928

GENERAL PREVALENCE

The total reported incidence of communicable diseases for March was very high due principally to the prevalence of measles.

As was the case for February the incidence of measles was by far the highest of any March in the history of the Department. There has been no evidence of a decline as yet. The incidence of mumps was rather high.

The reported incidence of diphtheria scarlet fever, pulmonary tuberculosis lobar pneumonia German measles and whooping cough was within endemic limits.

In February a new low record for typhoid fever for that month was reported. Again in March a new

low record has been reached. It is the lowest record for any month in any year. The incidence is 35 per cent lower than the previous best March record in 1926. The first quarter of the year shows a reduction of 20 per cent from the previous low first quarter in 1926.

Fewer cases of influenza were reported than in any previous March. The incidence of poliomyelitis was low.

RARE DISEASES

Actinomyces was reported from Lynn 1 total, 1. *Anterior poliomyelitis* was reported from Boston 1 Cambridge 1 Hopkinton 1 Somerville 1 Wakefield 1 total 5.

Anthrax was reported from Haverhill 1 total 1. *Dog bite requiring antirabic treatment* was reported from Asblund 1 Boston, 16 Braintree 1 Chelmsford 4 Hanson 1 Lowell 17 Lynn 1 Mansfield 1 Marblehead 1 Newton 3 North Attleboro 1 Peabody 1 Revere 8 Southbridge 3 Stoughton 2 Waltham 1 Winchester 1 Winthrop 4 Worcester 6 total 73.

Encephalitis lethargica was reported from Weymouth 1 total 1.

Epidemic cerebrospinal meningitis was reported from Adams 1 Boston 4 Easthampton 1 Greenfield 1 Lowell 1 Northampton 2 Somerville 1 Springfield 1 Worcester 1 total 13.

Pellagra was reported from Boston 1 total 1.

Septic sore throat was reported from Beverly 1 Braintree 1 Boston 3 Cambridge 5 Chelsea 1 Lynn 2 Plymouth 1 Somerville 1 total 15.

Trachoma was reported from Boston 4 Chelsea, 1 Fitchburg 1 Worcester 1 total, 7.

PROPOSED NATIONAL INSTITUTE OF HEALTH

Last year the Federal Government expended more than \$13,000,000 in fighting plant diseases and pests more than \$8,000,000 in fighting the diseases of animals and about \$43,000 for the research department of the Public Health Service. In preparing an argument in favor of an intensive study into human diseases the Public Health Authorities estimate that

MONTHLY REPORT OF CERTAIN COMMUNICABLE DISEASES.

DISEASE	Cases in Entire Population			Epidemic Index	Case Rates per 100,000 Pop.		
	Mar 1928	Mar 1927	Prosedemic Index		Mar 1928	Mar 1927	Expected Rate***
ALL CAUSES	15,906	10,422	-	-	367.8	244.1	-
Ant. Poliomyelitis	5	3	12*	.4**	.1	1	3
Diphtheria	411	429	447*	.9**	9.5	10.0	10.3
Measles	8,227	1,297	4,234*	1.9**	180.2	30.4	97.9
Pneumonia, Lobar	617	563	688*	.9**	14.3	13.2	15.9
Scarlet Fever	1,408	2,517	1,324*	1.1*	32.6	59.0	30.6
Tuberculosis, Pul.	435	490	365*	1.2**	10.1	11.5	8.4
Typhoid Fever	13	44	20*	.7**	.3	1.0	5
Whooping Cough	1,198	780	1,094*	1.2**	27.7	17.8	25.3
Chicken Pox	974	1,167	-	-	22.6	27.3	-
German Measles	111	68	-	-	2.6	1.6	-
Influenza	50	89	-	-	1.2	2.1	-
Mumps	1,496	2,027	-	-	34.6	47.6	-
Tuberculosis, O. F.	82	61	-	-	1.9	1.4	-

This Index is an attempt to estimate the number of cases based on the trend during the past years which can be expected to occur and is for the purpose of comparison with the number of cases which actually did occur.

This ratio expresses how prevalent the disease is compared with the index mentioned above. 1.0 indicates that the actual number of cases equals the expected number. A larger

number means a greater prevalence and a smaller number a lesser prevalence than expected. Thus 2.0 would indicate twice the expected number of cases and 5 half the expected number of cases. The method used to determine the indices is described in the August 15, 1927 issue of the BOSTON MEDICAL AND SURGICAL JOURNAL.

* Calculated from the Prosedemic Index.

to see what the case will do in labor. The ability of the baby's head to mold, the amount of "give" of the pelvic ligaments and the character of the uterine contractions are variable factors and can only be determined after the case is in actual labor. Any of the other methods of induction would preclude the possibility of a subsequent Caesarian Section.

The occasions for starting patients in labor are few and the cases should be carefully chosen. We do not wish to give the impression that the use of pituitrin to induce labor is an entirely harmless procedure. Also, we were not advocating its employment as the method of choice for inducing labor, but in discussing the purposes of pituitrin in obstetrics, called attention to the fact that this was one of its uses.

Questions of a similar nature to the foregoing will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

BOSTON MEDICAL LIBRARY

WILLIAM HARVEY (1578-1657)

THE medical world is very properly taking notice this year of the 300th anniversary of the publication of "*Exercitatio Quatomica de Motu Cordis et Sanguine in Animalibus*", Harvey's great work on the circulation. The significance of this work and at the same time the occasion for celebrating its tercentenary is the fact that it represented the beginnings not only of modern physiology but was one of the first examples of the application of scientific principles to the study of medicine. The authority of Galen, which had dominated medical thought for 1300 years was first seriously shaken and though Vesalius, Fabricius, Cervetus and Sylvius has made gestures to this end, no finished study had been published that was destined to so seriously influence subsequent thought as did this book of Harvey. Had not the influence of the Roman Church in Catholic countries and certain of the leaders in the Reformation in others exerted such a restraint upon scholarship it is probable that what Harvey is credited with having initiated might have had a somewhat earlier birth. In England opposition from such sources was not at this time so potent. Harvey was born near Folkstone, England in 1578. He was graduated from Caius College at Cambridge in 1597 and having decided to study medicine made his way to Padua the most renowned institution for the pursuit of medical studies at that time. Here he came under the instruction of Fabricius who was teaching anatomy there, certain of whose observations he was later to elaborate and perfect. From here he was given

his diploma in medicine in 1602. He then returned to England where he started practice, was soon (1607) admitted to the College of Surgeons and by 1609 was occupying a position of some importance at St Bartholomew's Hospital. He was widely read in the classics of medicine, was an admirer of Aristotle and Galen and quotes the former advising the study of comparative anatomy as a means of making clearer that of the human body. In 1615 he was chosen Lumleian lecturer at the College of Physicians and in April of 1616 he gave the first published expression in the form of lectures of his views on the circulation of the blood which however were not published in book form until 1628. His writings indicate that in the pursuit of his studies in anatomy he had dissected about eighty subjects. He had the work of Vesalius, Columbus, Fallopius and others at his fingers ends. He quotes Aristotle more frequently than any other author and after him Galen, for whom he apparently had professional respect without much personal admiration. His familiarity with Horace and Virgil among the Latin poets and with Caesar and Cicero was often shown. He had read St Augustine and was well grounded in Bible study. In 1618 he was Physician Extraordinary to King James I with a promise of appointment to be Physician in ordinary at the next vacancy. His book on the circulation excited considerable discussion both at home and abroad but no where was there claim that any other was entitled to priority of discovery. He took trips abroad by order of the King, as physician to certain of the Royalty. He is said to have been present at the battle of Edgehill where he was in charge of the Prince of Wales and the Duke of York and sat on the side lines reading a book during the progress of the battle. He had a considerable practice, was very industrious in prosecuting his studies and achieved high position among the physicians of his day. He refused election to the presidency of the College of Surgeons on account of his age. He suffered much from the gout and it was during an attack of this malady that he died on June 3, 1657. He is buried in a memorial chapel at Hampstead Church, built by the College of Surgeons.

Such of his works as the Library possesses will be exhibited during the week of April 30th.

FRACTURES OF THE CARPAL SCAPHOID

In spite of the fact that there have been repeated warnings in medical literature to the effect that sprains of the wrist are frequently far more serious than they, at the first blush, appear the profession is singularly unmindful of these warnings either because personal experience has not enforced them or because familiarity with medical literature has been lacking. For this reason during the week of April 30th, there will be found on display in Holmes

from page 57 and 58 he says. It is not the hospital's mission to ease the financial burdens of people. (Note the hospital treats the individual not the general public") "let other charities do that. The hospital's mission is to relieve and comfort the sick and suffering to help all curative processes, and do this alike for rich and poor. Today there is a large class neither rich nor poor but self supporting self respecting wage earning to be served as well. In order to do this for the poor money must be solicited. "This is trust money given for an especial purpose." Patients who can pay the cost of their service should certainly do so. Those who can only pay a part should pay what they can. There are others relatives friends or employers who may be obligated to pay a part or even the whole cost. That this policy is practicable today is shown by the report of the Massachusetts General Hospital for 1926. For the house service proper the average cost was \$5.57 daily the average receipts from patients including nurse, \$2.31 daily gratuity 60%. Patients were admitted as low as \$1 per week 295 at a rate of \$50 per day. It may encourage understanding to define charity as sharing the burdens of those unable to bear their burdens alone. The extent of the charity meted out is to be measured by the ability of the recipient to help himself as well as by the extent of his needs. To quote the Commissioner of Public Welfare's report for 1925 page 2. "Public assistance is today more adequate than it has ever been. When public authorities give in a way to relieve the burden from relatives and friends they give badly. When they give in a way to stimulate the help of these they give well." This is more emphatically true of private charity. A summary of sixty community hospitals shows that those served formed three nearly equal groups one group not being able to pay anything themselves but having a part of their cost paid by the city state or by friends or employers. The second group pay a part of the cost individually. The third group pay more than average cost the total received from the entire hospital service being about two-thirds of the cost. In some hospital groups about three-fourths of the cost of maintenance is received. To be more concrete a group of fourteen hospitals in South Middlesex District in 1926 was studied. There were 28,290 hospital patients treated at a per capita cost of \$4.58 daily a loss of \$1.12 per day. Industrial accident cases were treated at a loss of 34%. Two-fifths of the loss was met by interest on endowments three-fifths by annual subscriptions or contributions. There was in this group a deficit of nearly 2% of the cost to be divided among thirteen hospitals. This last could only be met by those tireless workers that comprise the Ladies Aid Societies etc. Only comparatively few shoulder the burden. What the insurance companies failed to pay had to be met, not by the public as a whole, but by a few only and how few only the few know.

Previous to the passage of the Workmen's Compensation Act the administration of charity in community hospitals throughout the State was a simple matter. Charity was administered with discrimination according to the needs and ability of the individual patient, the staff doctor contributing his services gladly for deserving cases. When the Act placed the burden of providing medical and hospital care on the insurance companies the situation was changed by the introduction of public servitors for a profit. Instead of a team of local workers with no profit in sight or anticipated governed by local conditions

and necessities the stock companies all of whom with one exception were from other states or with their home offices in Europe claimed the right of charity rates and free medical care from the hospital trustees as a necessary part of the hospital service. Instead of the patient seeking treatment bearing the burden of his injury as an individual the insurer who became responsible for both hospital and medical care under the law and was paid for it repudiated the one and claimed charity rates for the other. This was not so simple as the insurer claimed community rights in all hospitals. Charity and profits could not sleep amicably in one bed. Because some city bosses smiled when profits made advances profits like many a sailor lad from across the sea, tried to annex sweet charity in every hospital. The trustees shook their heads and the advisory medical committee was consulted. They seemed to think profits a nice little thing. He was such a spender too. For every dollar paid for the benefit of the injured worker he collected \$1.663 in premiums paying \$4165 for brokers fees and the home office. Profits seemed to like charity so much it might be best to try companionate marriage for a while and see. This was about 1920. How does the situation stand today? It begins to look as if there would be no big or little profits following the union for relations are strained. Some fifty hospitals have repudiated this union. The question has been raised. Is it legal to use endowed charity for the benefit of any profit seeking interest? The Special Commission of 1926 (quoted in the March 22nd JOURNAL) said. Hospitals should not be forced to do charity in industrial cases and the right to determine the obligation for free medical service by staff doctors in their community hospitals rests with the hospital trustees.

There are six large municipal hospitals supported wholly or in part by taxation and six large charitable hospitals used for teaching purposes all caring for industrial patients. Many of these care for patients from a wide area not only from near Boston but often from distant New England places. These twelve hospitals care for over 100,000 patients yearly. The sixty hospitals previously mentioned care for about twice that number but their clientele is more restricted and largely local. If any exceptions are taken to the assumptions made in the published ruling of the Accident Board relative to the perquisites and obligations of staff doctors in general as they may apply to the municipal and teaching hospitals, there are plenty of staff doctors representing them to express such views. The larger group of sixty hospitals in general caring for twice as many patients have a limited interne service when there is any. There are few large clinics suitable for teaching or helpful for training specialists. It is the opinion of the writer that the assumptions quoted apply only in part if at all to staffs where the doctor on duty gives an equal amount of time skill personal attention and responsibility to that given in private practice generally. When he gives free service to charity patients or to those who can pay only a less than-cost rate he has met his rightful obligations to the hospital and local community. The term "ward patient" no longer means a charity patient. There are as many kinds of ward service as there are classifications for patients. Whenever the regulations of the hospital permit, and the patient is allowed to select his own physician the fact that a staff doctor exercises the relationship and responsibility of a private physician actually rendering the needed service per

last year 50,000,000 people suffered from colds and bronchitis 17,000,000 from influenza and grippe, 11,000,000 from diseases of the digestive system, 8,000,000 from tonsillitis and sore throat, and 5,000,000 from diseases of the nervous system

A bill has been introduced in the Senate by Senator Ransdell of Louisiana providing for the creation of a National Institute of Health within the Public Health Service carrying with it an appropriation of \$2,000,000 a year for a term of five years

MASSACHUSETTS LEGISLATIVE NOTES

HOUSE—NO 1219

An Act enlarging the District to which Certain Laws relative to the Emission of Smoke shall apply and providing for Further Investigation

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows

SECTION 1 Section one of chapter six hundred and fifty-one of the acts of nineteen hundred and ten, as amended by section one of chapter ten of the acts of nineteen hundred and eleven is hereby further amended by striking out the third paragraph and inserting in place thereof the following —

'District means the district to which the provisions of this act shall apply, to wit —That part of Boston harbor lying westerly of a line drawn from the southeastern point of Deer Island to the north eastern point of Long Island and the territory comprised within the cities and towns of Arlington, Belmont Boston Braintree Brookline, Cambridge Canton, Chelsea Dedham, Everett, Lynn Maiden Medford Melrose Milton Needham, Newton Quincy Revere, Saugus, Somerville Stoneham Wakefield, Waltham, Watertown, Weymouth Winchester, Winthrop and Woburn

SECTION 2 The department of public utilities is hereby directed to further consider ways and means for more effectively abating the smoke nuisance in the district described in the preceding section so far as is consistent with the reasonable requirements of fuel consumers and to make a report of its findings and recommendations to the general court together with drafts of such legislation if any as it recommends by filing the same with the clerk of the house of representatives not later than December first of the current year

RECENT DEATHS

STEVENS—DR GEORGE BECKWITH STEVENS, a retired Fellow of the Massachusetts Medical Society, a former practitioner of Roxbury, died at his home in West Roxbury April 14 1928 at the age of 82

Dr Stevens was born in Castine Maine October 4, 1845 the son of Joseph L. and Dorothy Little Stevens. After attending the schools of Castine he came to Boston with his parents and entered Harvard Medical School, where he received his M.D. in 1870 first serving as house officer at the Boston City Hospital. From 1871 to 1891 he practised in Gloucester, and then in Roxbury moving to West Roxbury four years ago.

He was interested in genealogy and for 15 years had been historian general of the Society of May

flower Descendants. He was a member of the Sons of the American Revolution and the Society of Colonial Wars. During the Civil War he served with the 141st Illinois Infantry and was a member in later life of Thomas G. Stevenson Post 26, G. A. R.

He is survived by his widow, Mrs. Mary C. (Hills) Stevens, two daughters, Mrs. Seavey P. Swan of West Roxbury and Miss Dorothy L. Stevens of Amesbury and a son, Paul Stevens of Amesbury.

CUMSTON—The death has been reported of Dr. CHARLES GREENE CUMSTON at Geneva, Switzerland April 13, 1928. Dr. Cumston, who has recently played such a prominent part abroad in the history of medicine both as a writer and officer of societies having to do with that specialty was from 1894 to 1912 a practitioner and writer in Boston. In the latter year he moved to Geneva and had made that city his home since. He will be missed by a large circle of friends both here and in Europe.

CORRESPONDENCE

PRIVATE CHARITABLE HOSPITALS AND THE BURDEN OF CHARITY

THERE is perhaps no field of human endeavor providing a personal service for human kind that requires a keener or more rigid discrimination than the administration of either public or private charity. The Greeks are still suspected of bearing gifts and the butler must keep watch for the unbidden guest. Charity appears a better term than *free service*, for the latter in these gasoline days often suggests the lurking place of that polite smiling impudent rascal designated unearned profits.

In presenting the viewpoint of the trustees of the private community charity hospitals the term *charity* is used without reproach, and the term *greed* not intended to apply to 'hard-earned profits'. The viewpoint is not intended to cover the administration of hospitals maintained by taxation or charity hospitals connected with medical schools used for clinical teaching. There are considered some sixty or more hospitals, classed officially as private charitable corporations that serve their respective communities adapted to care for the usual industrial accident cases needing hospital care. In the main these hospitals are financed, equipped and maintained, not by the general public but by a few interested philanthropic individuals. The estimated cost of the modern hospital is from \$4,000 to \$6,000 per bed, equipment and furnishings extra. Its furnishings are often provided by small groups. The cost of buildings and equipment is not represented in the maintenance charge. Having a hospital home provided at a cost per bed equal to a family home a few years ago and often provided by free gifts, exemption from taxation is small return for the donors' generosity and the benefits shared by the whole community. There is much confusion as to the community hospital's mission and who bears the burden of its support.

Dr. Alfred Worcester, Henry K. Oliver, Professor of Hygiene, Harvard University, who helped a generation ago with the inauguration of many hospitals in Massachusetts, expressed his opinion on the mission of community hospitals in his book *Small Hospitals* published in 1894. I have his authority to state that he holds the same opinion now. To quote

Bar At least fifty hospitals classify patients protected by insurance as ineligible for charity service

The accumulated facts indicate that most community hospitals are *public* institutions only in the sense that the hospital service offered the *public* is for a charge commensurate with the ability of the patient to pay the cost that charity is extended the individual whose immediate need is greater than his own ability or that of others obligated to meet the burden that the charity extended is private charity contributed by less than 4% of the people that public appeals for contributions are for *charity*, not *public* needs that no public or private seeking interests are eligible for charity service that charity funds are properly extended by trustees only with discrimination that the general public has no more claim on charity funds than an able-bodied man has to a living at public expense without work that the present attempt to lighten the burden placed on the consuming public by the Compensation Act is without precedent in Massachusetts and is unjust and contrary to all economic principles

Why are charity hospitals exempt from taxation except the State has set its seal of approval on charitable agencies giving the trustees the right to control charities proper use? The duty of trustees is to safeguard charity funds from the inroads of individual or corporate profit seeking interests. However much sophistry may disguise the plea, the obligation to withhold charity is commensurate with obligation to extend it to the deserving

GEORGE E WHITEHILL M D *Secretary*
Board of Management,
Whidden Memorial Hospital
Everett Massachusetts

GROWING UP

The Commonwealth of Massachusetts
Department of Public Health
State House Boston
April 9, 1928

Editor NEW ENGLAND JOURNAL OF MEDICINE

Recently I had the great pleasure of reading *Growing Up* by Carl Deschweinitz, published by MacMillan which I understand in book form uses the method of biological instruction which the author used on his children. To my mind there is in society today no more pathetic individual than the parent who desires to do better by his or her children as far as biological instruction is concerned than was done by him but does not know how when where etc. This particular book, which is small with large print and illustrated seems to me to hit the nail square on the head. It will undoubtedly offend but I think the offence will be to the inhibitive adults rather than to the children. It seems to me it would be worth while calling this to the attention of those in the State who would be glad of knowing of just such a book. I hasten to add that I have no arrangement with the author to share in the royalties

Yours truly
GEORGE H BIGELOW M D
Commissioner of Public Health

ALTERNATIVE TO VACCINATION

Mr Editor

As an alternative to vaccination for those who do not believe in it the following prescription of a naval captain given to me by a retired officer of high rank is I believe unique

When American citizens were evacuated from Tampico, Mexico, by United States forces in 1915 it seems that a married couple who refused vaccination were taken from a home where smallpox was present

Argument as to the desirability of protecting themselves and others by submitting to vaccination being as usual futile the captain ordered supervised daily baths of gasoline for the couple and these orders were carried out until the vessel disembarked its passengers at New Orleans several days later

All martyrs for the faith did not perish under the persecution in Ancient Rome

SAMUEL B WOODWARD M D

P S No smallpox developed en route What happened afterwards is perhaps another story

NEWS ITEMS

NEUROLOGICAL INSTITUTE OF NEW YORK—

Two million dollars was asked to complete the Neurological Institute Building fund and establish a fund for medical research at a trustees dinner given recently in honor of Robert Thome President of the Institute. The Institute is now making a study of infantile paralysis epilepsy and encephalitis lethargica and an intensive pre-natal study is proposed

INCREASE IN INFLUENZA AND PNEUMONIA

DEATHS—Increases in the prevalence of smallpox and in the deaths from influenza and pneumonia and decreases in typhoid fever scarlet fever and diphtheria were indicated by the reports of State health officers for the week ending March 17, as compared with the corresponding week of 1927. Ninety-three cities reported 1,449 deaths from influenza and pneumonia for the 1928 week, as compared with 1,251 for the corresponding week of last year.

DR. ELMER F OTIS WILL VISIT AND STUDY

ABROAD—Dr Elmer F Otis of the staff of the New England Sanitarium and Hospital Stoneham Mass., retiring president of the New England Association for Physical Therapeutics is on his way to Vienna where he will engage in study. He is accompanied by his wife Clara Beckner Otis M D also of the Sanitarium staff who will also take special work.

THE ENGAGEMENT OF DR JOHN M FALLON

AND MISS KATHLEEN E McCANN—Dr and Mrs Daniel McCann of Bangor have announced the engagement of their daughter Kathleen Elizabeth McCann to Dr John Michael Fallon of Worcester only son of Dr Michael F Fallon chief surgeon for many years at the St Vincent Hospital in Worcester

Miss McCann is a graduate of the College of the Sacred Heart in New York City class of 1927 and is employed in the Bangor Public Library. Dr Fallon is a graduate of Holy Cross College in the class of 1919 and the Harvard Medical School class of 1923. He served his term as interne at the St Vincent Hospital Worcester and at the Peter Bent Brigham Hospital Boston. Subsequently he was recalled by Harvard to teach in the anatomy department of its Medical School and at present he is studying at the Mayo Clinic in Rochester Minn.

sonally, it is hard to understand the reasonableness of any quibble whether the doctor was chosen by the hospital, the patient, or the insurer. The doctor *does the work*, the patient *receives the benefit*, and the part of the insurer is to pay a reasonable fee for adequate service, under Sec 30.

The principle of a cost rate for hospital service has been in operation in Ohio for some time, and since 1921 Connecticut has required by law that the insurer pay the hospital cost rates.

The writer has knowledge that in one of the larger municipal hospitals, Everett and other cities using this hospital for dependent patients, were charged a cost rate of \$27.50 weekly in 1926, which was 30% larger than the \$21 per week rate then allowed by the insurance companies for compensation cases. The difference saved by the insurers was over \$6,000. Is the consuming public less able to pay this difference than the tax payers of these municipalities? Who hears this burden? Who reaps the profit? The paragraph in the ruling being considered, referring to the demand of the staff doctor for a reasonable fee for adequate service attempts to discover a fallacy by ignoring at least one other fallacy. There is first the assumption that the insurer derives no profit from this free medical service, and that the proportionately small group composing the *supporting public* is identical with the consuming public on whom the burden should rest. When the stock insurance companies claim the business necessity of both charity rates from the hospital and free service from staff doctors it is for them to demonstrate the necessity of a double ratio of expense compared with Mutual Massachusetts companies. See Report of Commissioner of Insurance for 1926, page 7. Also a ratio of expense many times in excess of the record of a monopolistic State fund. Information obtained from fifty per cent of the charity hospitals serving the largest industrial cities and towns outside of Boston, supplemented by the report of the Boston City Hospital to the State for 1926 warrants the estimate that fully 8,000 industrial accidents are given hospital service \$200,000 less than the average cost to the hospitals. If the free medical service was paid for at the rate now allowed for the same service outside the hospital, this present free medical service would total four times as much as the free hospital service or a total of \$1,000,000.

The Report of the Department of Public Welfare for 1926 records that the amount of annual subscriptions and contributions received by over 1,000 charitable corporations was in excess of sixteen millions which aided a current expenditure of over thirty-eight millions. No data has been recorded for the whole State which gives the ratio of individual givers to the whole public. Every one familiar with the difficulty of meeting the annual need of subscriptions knows that the ratio is small, yes very small, and that but a small fraction of the consuming public is represented in the giving, charity supporting public. It is reported that for several years, in a suburban city two thousand individual subscribers (4% of the population) pledged themselves to meet an annual deficit of \$30,000. The average local hospital returns to the community \$1.00 in service for \$70 paid by those responsible for the service received. The Stock Insurance Company, for each dollar spent for the injured worker, collects in premiums \$1.66. As a general proposition the Stock Insurance Company takes as its toll, for doing the business more than double what it pays for both hospital and med-

ical service. The hospital makes no profit, whether or not there is a profit, the insurance service is expensive.

In 1925 the Boston Chamber of Commerce collected information on the number of subscribers supporting 133 social agencies under eight groups. The field covered included Metropolitan Boston with a population of 1,100,000. There were less than 44,000 contributors or under 4% of the general public. Of the givers, 55.7% gave less than 3.2% of the whole amount collected. One per cent of the givers, or one person to 2,500, formed a group contributing 50% of the amount collected. This ratio has been confirmed by the experience of professional promoters of drives for charity purposes. See Ref. "Financing of Social Agencies," pp 33 and 34, 1925.

Both the Industrial Board and the Medical Advisory Committee, in presenting their viewpoint, give much stress to the public character of the hospitals caring for industrial cases, their public support and their duty to patients as members of the public. As the writer understands the situation very few of the hospitals classified as private charitable corporations receive any substantial support through local taxation. There are a few municipal hospitals among the whole group considered, that receive some aid from local governments. The data published by the Department of Welfare discloses no such help to charity hospitals. As indicated above, the excess of cost above receipts from patients is met by charity. Do charity contributions from 4% of the people entitle the other 96% of the people to claim the right of an equal share in the charity given to aid those selected with discrimination? The trustees of charitable institutions have been taught to believe that the common law precludes the payments of public monies for the use of private charity except "*quid pro quo*."

General public support is obtained by taxation or by levy on articles of universal consumption. The latter ensures a wider distribution of the burden and is more easily borne. The writer understands the entire burden for caring for industrial accidents was intended to be placed on the consuming public.

Under the present act, is it fair to tax a citizen of Boston to provide a less-than-cost rate at the Boston City Hospital to provide treatment for a worker engaged in the manufacture of shoes, paid for by a citizen of Springfield, Chicago, San Francisco or by a stockholder of an insurance company from London? Is it any the less unfair to use yearly charity subscriptions for the same purpose? Is it conceivable that the law makers of the State foresaw that the charity funds of the State were to be applied to reduce hospital charges for the benefit of the far reaching consuming public, or increase profits for the foreign stock companies? The trustees of charitable funds are guardians of its proper use. Would they do their duty to the local community and the donors of this charity if they sanctioned this unnatural union of profits and charity longer?

The report of the Department of Public Welfare for 1926 gives the annual income available from endowed charity with annual contributions at \$23,846,000. Under the State wide application of a less-than-cost rate for hospital service, tribute is levied on local communities for the benefit of the general consuming public 96% of whom are non-contributing. Protests are accumulating from many widely separated hospitals serving industrial populations along the Merrimack, the Connecticut, and Narragansett.

Bav At least fifty hospitals classify patients protected by insurance as ineligible for charity service

The accumulated facts indicate that most community hospitals are *public* institutions only in the sense that the hospital service offered the *public* is for a charge commensurate with the ability of the patient to pay the cost that charity is extended the individual whose immediate need is greater than his own ability or that of others obligated to meet the burden, that the charity extended is private charity contributed by less than 4% of the people that public appeals for contributions are for *charity* not *public* needs that no public or private seeking interests are eligible for charity service that charity funds are properly extended by trustees only with discrimination that the general public has no more claim on charity funds than an able-bodied man has to a living at public expense without work that the present attempt to lighten the burden placed on the consuming public by the Compensation Act is without precedent in Massachusetts and is 'unjust and contrary to all economic principles

Why are charity hospitals exempt from taxation except the State has set its seal of approval on charitable agencies, giving the trustees the right to control charities' proper use? The duty of trustees is to safeguard charity funds from the inroads of individual or corporate profit seeking interests. However much sophistry may disguise the plea, the obligation to withhold charity is commensurate with obligation to extend it to the deserving

GEORGE E. WHITEHILL, M.D. *Secretary*
Board of Management
Whidden Memorial Hospital
Everett Massachusetts

GROWING UP

The Commonwealth of Massachusetts
Department of Public Health,
State House Boston
April 9 1928

Editor NEW ENGLAND JOURNAL OF MEDICINE

Recently I had the great pleasure of reading *Growing Up* by Carl Deschweinitz published by MacMillan which I understand in book form uses the method of biological instruction which the author used on his children. To my mind there is in society today no more pathetic individual than the parent who desires to do better by his or her children as far as biological instruction is concerned than was done by him but does not know how when, where, etc. This particular book, which is small with large print and illustrated seems to me to hit the nail square on the head. It will undoubtedly offend but I think the offence will be to the inhibitive adults rather than to the children. It seems to me it would be worth while calling this to the attention of those in the State who would be glad of knowing of just such a book. I hasten to add that I have no arrangement with the author to share in the royalties

Yours truly
GEORGE H. BIGELOW, M.D.
Commissioner of Public Health

ALTERNATIVE TO VACCINATION

Mr. Editor

As an alternative to vaccination for those who do not believe in it the following prescription of a naval captain given to me by a retired officer of high rank is I believe unique

When American citizens were evacuated from Tampico, Mexico by United States forces in 1915 it seems that a married couple who refused vaccination were taken from a home where smallpox was present

Argument as to the desirability of protecting themselves and others by submitting to vaccination being as usual futile the captain ordered superheated daily baths of gasoline for the couple and these orders were carried out until the vessel disembarked its passengers at New Orleans several days later

All martyrs for the faith did not perish under the persecution in Ancient Rome

SAMUEL B. WOODWARD, M.D.

P. S. No smallpox developed en route. What happened afterwards is perhaps another story

NEWS ITEMS

NEUROLOGICAL INSTITUTE OF NEW YORK—Two million dollars was asked to complete the Neurological Institute Building fund and establish a fund for medical research at a trustees' dinner given recently in honor of Robert Thome, President of the Institute. The Institute is now making a study of infantile paralysis, epilepsy and encephalitis lethargica and an intensive pre-natal study is proposed

INCREASE IN INFLUENZA AND PNEUMONIA DEATHS—Increases in the prevalence of smallpox and in the deaths from influenza and pneumonia and decreases in typhoid fever, scarlet fever and diphtheria were indicated by the reports of State health officers for the week ending March 17, as compared with the corresponding week of 1927. Ninety-three cities reported 1,449 deaths from influenza and pneumonia for the 1928 week, as compared with 1,251 for the corresponding week of last year

DR. ELMER F. OTIS WILL VISIT AND STUDY ABROAD—Dr. Elmer F. Otis of the staff of the New England Sanitarium and Hospital, Stoneham, Mass., retiring president of the New England Association for Physical Therapeutics, is on his way to Vienna where he will engage in study. He is accompanied by his wife Clara Beckner Otis, M.D., also of the Sanitarium staff who will also take special work.

THE ENGAGEMENT OF DR. JOHN M. FALLON AND MISS KATHLEEN E. McCANN—Dr. and Mrs. Daniel McCann of Bangor have announced the engagement of their daughter Kathleen Elizabeth McCann to Dr. John Michael Fallon of Worcester, only son of Dr. Michael F. Fallon, chief surgeon for many years at the St. Vincent Hospital in Worcester

Miss McCann is a graduate of the College of the Sacred Heart in New York City, class of 1927 and is employed in the Bangor Public Library. Dr. Fallon is a graduate of Holy Cross College in the class of 1919 and the Harvard Medical School, class of 1923. He served his term as interne at the St. Vincent Hospital, Worcester, and at the Peter Bent Brigham Hospital, Boston. Subsequently he was recalled by Harvard to teach in the anatomy department of its Medical School and at present he is studying at the Mayo Clinic in Rochester, Minn.

THE STANDARDIZATION OF CLINICAL THERMOMETERS—A conference of manufacturers, distributors and organized users of clinical thermometers was held in Washington, March 30 ult

New thermometers under the commercial standard will begin to be distributed next October

Annual revision of the standard will be conducted by a committee representing the manufacturers

LING MEDAL TO PROFESSOR WINSLOW—Professor C E A Winslow, Lauder professor of public health in the school of medicine at Yale University has been awarded the Ling medal by the Ling Foundation of Los Angeles "in appreciation and recognition of Professor Winslow's active and unselfish work in behalf of the health progress of school children"—*Science*

APPOINTMENT OF DR DAVID STEARNS—Dr David Stearns has been appointed to the position of resident physician to the Boston Homeopathic Hospital

He succeeds Dr Clifton T Perkins. Dr Stearns will continue to occupy the position of resident surgeon

A GRANT FOR A RESEARCH FELLOWSHIP—Announcement has been made that the Maltbie Chemical Company of Newark New Jersey, has contributed a grant for a research fellowship for the coming year to the Department of Chemistry of Princeton University

The research work to be done under this fellowship will be fundamental in character and will cover certain phases of the chemistry of creosote and creosote compounds

NOTICES

A LECTURE COURSE IN PHYSIOTHERAPY WITH PRACTICAL DEMONSTRATIONS OF ADVANCED TECHNIQUE

A Lecture Course in Physiotherapy with Practical Demonstrations of Advanced Technique will be given by Charles L Ireland, M D formerly Chief of Physiotherapy, Walter Reed General Army Hospital, Washington D C U S Army General Hospital, Ft. McPherson, Ga., U S Army General Hospital Des Moines, Iowa U S Army Base Hospital, Camp Grant Rockford, Ill U S Veterans Bureau District Seven including Ohio Indiana and Kentucky at Boston Mass, May 7th to 12th at 857 Boylston street Synopses of Lectures

Monday May 7 8 00 P M A physiologic concept of modern therapy, accompanied by motion pictures and lantern slides

Tuesday May 8 10 00 A M Galvanism Proper

ties of positive and negative poles, with their application in modern physiotherapy

Tuesday, May 8, 4 00 P M Sinusoidal Electric Indications and use for slow, rapid and interrupted rapid sinusoidal currents

Wednesday, May 9, 10 00 A M Sinusoidal Electricity continued, with demonstrations

Wednesday, May 9, 4 00 P M Anatomy of the Autonomic, Sympathetic and Cerebral spinal Nervous Systems, with demonstration of applying low tension currents to nerve centers controlling all organs of the body

Thursday, May 10 10 00 A M Properties of High Frequency Currents A Tesla, B d'Arsonval, C Oudin

Thursday, May 10, 4 00 P M Demonstration of application of high frequency currents Diathermy for Pneumonia, Neuritis, Sciatica, Diabetes, etc

Friday, May 11, 10 00 A M Newer phases of quartz light irradiation in therapy A, Basic principles, B, Technique for general body irradiation C, Technique for localized irradiation in skin areas or orifices

Friday, May 11, 4 00 P M Quartz light therapy of Anemia, Rickets Tuberculosis, and other malnutritive cases and the reason for its use

Saturday, May 12, 10 00 A M Scope and utilization of Infra Red and Phototherapy or visible light therapy, and a resume of the week's work.

A physician may bring his technician with him if he desires without additional charge No technicians will be admitted to these lectures unless they are actually in the employ of a Doctor of Medicine and shall, in such cases, bring a letter from the employing physician

For further information address Secretary Ireland Lecture Course, 223 North California Avenue, Chicago, Illinois

DR WINSLOW TO GIVE CUTTER LECTURES

Dr C E A Winslow, Professor of Public Health at Yale University, has been appointed Cutter lecturer on preventive medicine for 1928-29 at Harvard University

INTERNATIONAL SANITARY CONVENTION

The Senate on March 22, ratified the revision of the International Sanitary Convention signed at Paris on June 21, 1926 The original Convention was of the date of January 7, 1912

More than 40 nations signed the revision in 1926 among the subjects dealt with in this treaty are maritime quarantine reporting of disease outbreaks, sanitary precautions in infected ports and other matters dealing with the spread of diseases from one country to another

BOSTON LYING-IN HOSPITAL

AN APPEAL

Boston, April, 1928

1927, the ninety fifth year of the hospital, saw more and better work accomplished than ever before Since the hospital opened it has had over 100,000 patients and now about one-seventh of all the babies born in Boston are looked after by its staff It is

only through the kindness of our many friends to whom the Trustees are most grateful, that we are able to carry on, but we need enlarged donations if we are to avoid an annual deficit, which has been quite heavy in the past.

The hospital is overcrowded most of the time and we are frequently obliged to refuse applicants for lack of room. During the year we have had as many as 120 patients at one time, although the hospital is considered a one hundred bed institution.

The west wing is more than ever needed and it is expected that erection will be started in three or four months, as plans are practically completed.

During the past year 2345 patients were admitted to the Hospital, 1154 were attended in their homes and 17,644 visited the prenatal clinics. With the continued growth of the clinics it is felt that the proportion of strong healthy babies is greatly increased and that this branch of the work is very important to the whole community.

Contributions may be sent to James R. Hooper, Treasurer No 87 Milk Street Boston, Mass.

WILLIAM L. RICHARDSON M.D.,
President Emeritus

Trustees John L. Batchelder President James Lawrence Vice-President William D. Sohler, Secretary James R. Hooper Treasurer Louis Bacon William A. Coolidge, Charles E. Cotting Courtenay Crocker Charles P. Curtis Mrs. Thomas B. Gannett, Roger Pierce Walworth Pierce William D. Sohler Jr. Albert Thorndike

Board of Lady Visitors Mrs. Rodolphe L. Agassiz, Mrs. Francis I. Amory, Mrs. Harcourt Amory Mrs. Edward L. Bigelow, Mrs. Henry Forbes Bigelow Mrs. Gorham Brooks Mrs. William H. Claflin Jr., Mrs. T. Jefferson Coolidge, Mrs. T. Jefferson Coolidge Jr., Mrs. Francis B. Crowninshield Mrs. Philip Dexter, Mrs. Carl Dreyfus Mrs. Marshall Fabyan Mrs. Thomas B. Gannett, Chairman Miss Adeline D. Hooper, Secretary Mrs. Walter Hunnewell Mrs. Jesse Koshland, Mrs. William E. Ladd Mrs. Horace Morison Mrs. Neal Rantoul Miss Eleanor Sohler, Mrs. Bayard Warren Mrs. Sinclair Weeks Mrs. Edward C. Wheeler Jr.

Honorary Members Mrs. Charles H. Gibson Mrs. Francis L. Higginson

FIFTH INTERNATIONAL MEDICAL CONGRESS OF INDUSTRIAL ACCIDENTS AND OCCUPATIONAL DISEASES

The first official circular of the Fifth International Medical Congress of Industrial Accidents and Occupational Diseases to be held September 28-30, 1928, in Budapest, Hungary announces papers by the following physicians from the United States: Dr. Fred H. Albee New York 'Traumatic Pseudo-Arthroses and Treatment by Automatic Machinery' Dr. Emery R. Hayhurst, Columbus 'A Large Group of Silicotics with Very Low Incidence of Tuberculosis' Dr. Eugene L. Fisk, New York 'The Periodic Health Examination in Industry' Dr. Henry H. Kessler New York 'The Medico-Legal Aspects of Occupational Diseases' Dr. R. H. Corwin Pueblo 'Sanitation, Noise and Psychology in Industrial Hospitals' Dr. Raphael Lewy New York 'The Spinal Column in Reference to Trauma' Dr. Richard Kovacs New York 'Physical Therapy in Traumatic Conditions'.

Titles for additional papers are still being received. Those related to Industrial Hygiene are to be sent

to Dr. Emery R. Hayhurst, Joint Chairman Columbus, Ohio, and those related to Industrial Accidents to Dr. Fred H. Albee Joint Chairman, New York. June 1st is the latest date for the receipt of titles in Budapest.

Very extensive plans for scientific, social and scenic attractions in connection with the Congress are announced. The Hungarian Consul General of New York will grant free *visé* of passports to all visitors to the Congress and their families. A goodly number of participants have signed up for the Study Tour to the Congress, sailing on August 16th from New York on the S.S. "München", visiting capitals and health resorts in Central Europe, and returning after the Congress via The Riviera and Spain, embarking from Gibraltar on September 28th, for the return trip.

Physicians interested to join should communicate with Dr. Richard Kovacs, Secretary, 223 East Sixty-eighth Street, New York, from whom also any further information regarding the Congress can be obtained.

REPORTS AND NOTICES OF MEETINGS

THE HARVARD MEDICAL SOCIETY

The Harvard Medical Society held a meeting on Tuesday evening, March 27, 1928, at the Peter Bent Brigham Hospital. After the presentation of cases Dr. H. A. Christian introduced Sir Humphrey Rolleston, Regius Professor of Medicine at Cambridge University and Physician in Chief Pro tempore, at the Peter Bent Brigham Hospital. Sir Rolleston spoke on 'The Clinical Significance of Abnormal Blood Pressure'.

The first case was presented by Dr. Menard. The patient was a 43-year-old seamstress who came to the hospital because of weakness and nosebleeds. Two of her sisters had died of high blood pressure. Her illness was of three years' duration and was characterized by headaches, nocturia, palpitation, and dyspnea on exertion. She had spent seven weeks at the Boston City Hospital, and while feeling better on discharge the symptoms still remained. Epistaxis became marked and she noticed some edema of her ankles. On entrance to the hospital she was orthopedic and very weak. The heart was enlarged 15 cm. from the mid-sternal line, moderately fast, with a gallop rhythm and a systolic blow at the apex. The eye grounds showed marked tortuosity of the vessels with sclerosis and nicking of the veins. The liver was enlarged and tender, and there was some pitting edema of the extremities. Blood pressure was 220/110. The clinical pathology showed phthalein output of 10% and N.P.N. retention. No diagnosis was given.

The second case was presented by Dr. Ojienick. The patient was a 24-year-old telephone operator who came into the hospital with a diagnosis of bilateral cervical ribs. She gave a history of transient numbness of the fingers and pallor with weakness of her left hand when she had to raise her hands. No neurological symptoms were elicited and there was evident muscular atrophy of both arms and hands. Normal reactions to faradic and galvanic currents were obtained and the plethysmograms were normal. Skin temperature tests were done and the following

results obtained (a) a rapid loss of heat on the left side due to imperfect circulation, (b) a slowness of recovery of temperature in the extremity (c) the dorsal surface of the hand recovers much more quickly than the palm Dr Christian pointed out that all of us on standing straight can obliterate the pulse and produce potentially the same changes

Sir Humphrey Rolleston in the beginning of his lecture emphasized the fact that there are normal high or low blood pressures After finding the blood pressure high, one must determine whether it is essential hypertension or hyperpiesia, or caused by arteriosclerosis, kidney or heart trouble If none of these fit the case, we must decide whether to lower or raise the blood pressure, or give advice about wholesome living and dietetics

To reduce high blood pressure often brings with it acute illness for the patient. This has led to the belief that a raised blood pressure is a compensatory adjustment. This belief has been disproved by first lowering the blood pressure with vaso-dilators, and noting if a compensatory increase occurred Sir Clifford Allbutt suggested and upheld diathermy as a treatment for high blood pressure As to prognosis, one cannot be definite Many people live a long, happy and useful life with a blood pressure which on paper would be considered dangerous Death from high blood pressure occurs in the order of their frequency from cardiac failure, uremia cerebral hemorrhage Which one will give way first depends on the inborn resistance and on the presence of existing or acquired diseases such as arteriosclerosis The symptoms of high blood pressure depend first on the cause of the blood pressure itself, and secondarily on the changes in the arteries, arterio-sclerosis, as a result of long-continued high blood pressure It usually takes years for a high blood pressure to develop, but a form known as "malignant hypertension" is known which runs a very rapid course

As regards a habitually low blood pressure, Sir Rolleston pointed out that 0.3% of people show a normal low blood pressure which is often associated with longevity It also occurs in athletes and has been investigated in Cambridge The present conclusion is that no constant low blood pressure is attained in athletes While a moderately low blood pressure is associated with perfect health, a decidedly low blood pressure gives definite signs and symptoms lack of vigor, undue fatigability, and a tendency to faint sensitivity to cold and palpitation

Low blood pressure is due to a number of causes It occurs in status lymphaticus One other view is that essential hypotension is due to capillary stasis resulting from the excessive formation of histamine in the tissues It also is found in habitual smokers There are many diseases, pointed out by Sir Rolleston, which are characterized by a low blood pressure the cause of which is unknown In other cases such as in some heart lesions it is well compensated In aortic regurgitation the blood pressure in the leg is much higher than in the arm, caused by the contraction of the capillaries to prevent cerebral anemia

A change in blood pressure is associated with many clinical entities It was found that the high blood pressure due to arteriosclerosis was almost invariably accompanied by arteriosclerosis of the arteries supplying the medulla The explanation of increased systolic pressure to supply the distant brain centers is obvious In renal disease a low blood pressure is

found with an amyloid kidney, and in the later stages of cases which once had high systolic pressures In acute nephritis only a moderate rise, if any, is found Crises of high blood pressure of short duration occur, thought to be caused by the formation of histamine-like bodies in areas suffering with ischaemia In acute lobar pneumonia the blood pressure varies, but some have found that the systolic pressure is higher in fatal cases than in those ending in recovery In pulmonary tuberculosis a low blood pressure is not uncommon, but not diagnostic In gastro-intestinal conditions apart from those which produce severe pain, the blood pressure generally tends to be low Rapid and complete thrombosis of the portal vein causes a sudden fall of blood pressure

In brain conditions such as increased intracranial pressure, a rise greater than that in the cerebral vessels produces anemia and a compensatory rise in systemic blood pressure In traumatic concussion the rise in blood pressure is quite slow, while in sudden compression such as hemorrhage, the rise is rapid A very high pressure indicates a correspondingly large hemorrhage and the prognosis is grave

In endocrine disorders the blood pressure varies greatly In exophthalmic goitre it is usually raised, in the opinion of Sir Rolleston A new syndrome of exophthalmic goitre and tumor of the adrenal cortex has been described in which a high blood pressure is found and the outlook far from encouraging A hypersecretion of adrenalin is another cause of high blood pressure In connection with this a Russian surgeon, Opal, ascribes this cause to that of Raynaud's disease and recommends removal of one adrenal In Addison's disease an extremely low blood pressure is the most essential feature

The meeting was exceptionally well attended and of great interest

THE WORCESTER DISTRICT MEDICAL SOCIETY

On April 11th the Worcester District Medical Society was entertained by Superintendent Dr Harlan L Paine at the Grafton State Hospital, North Grafton Mass Dr Winfred Overholser spoke on 'Psychiatry and Massachusetts Criminal Law' Dr E H Trowbridge showed the Liebel Flarschein Cabinet, demonstrating the Electro-Surgical Knife in regard to 'Metastasis of Cancer', and Dr Frank E Stowell spoke on Physiotherapy in Rectal Diseases

H L PAINE Superintendent

MEETING OF THE STAFF OF THE MASSACHUSETTS GENERAL HOSPITAL

A clinical meeting of the Staff of the Massachusetts General Hospital was held on Thursday April 12 The program was given by the Neurological and Neuro-Surgical Services

The first paper was delivered by Dr S Biddle on the subject of pneumorachicentesis Dr Biddle said that the introduction of air into the spinal cord by means of lumbar puncture had been in use now for a number of years especially in Germany, where it has received more attention than it has in this country This method he said often enables one to obtain pictures of the ventricles just as good as those obtained when air has been injected directly into the ventricles and has the advantage of being a much simpler and on the whole less dangerous procedure He described the technique in some detail and showed

x-ray plates illustrating the results obtained. In the discussion Dr W J Mixer pointed out that the method was still in the experimental stage and that there was much to be learned from more accurate correlation of the x-ray pictures with the various types of pathology. Dr G Horrax said that in their experiments at the Peter Bent Brigham Hospital they had found this procedure particularly useful in visualizing the third ventricle. This was particularly valuable because there was often no other method of obtaining information as to this important structure.

Dr C A McDonald next showed two cases of unusual ocular manifestations following encephalitis. Both of the patients were women who had had encephalitis a number of years ago. The ocular manifestations were quite different in the two cases. In one there was a spasm of the eyelids. In the other an upward rotation of the eyeballs. Dr McDonald said that within a comparatively short time he had seen some 12 cases in which ocular symptoms followed encephalitis. For treatment hyoscine had been used with some success during an attack. It was often necessary for the patient to remain in bed in order to relax the spasm. Sodium chloride tablets given in gelatin capsules were of some use in controlling the salivation which is often troublesome in this condition.

Dr George Clymer described the local fat atrophy which sometimes follows insulin injections, and showed a patient with areas of marked atrophy of the fat and subcutaneous tissues of the upper arm. This unusual condition sometimes occurs after a relatively few insulin injections. Dr Clymer's interest in the subject arose from the study of a case in which the lesion was supposed to be due to some neurological disturbance.

The use of chloroform therapy in trigeminal neuralgia, tic and migraine was discussed by Dr Jacques DeBusscher. He told first of the interesting manner in which this drug was discovered. It was found that certain workmen engaged in doping the wings of aeroplanes with a mixture containing trichloroethylene were poisoned and that among their symptoms they showed anaesthesia over the distribution of the 5th nerve. It occurred to Oppenheim that the extraordinary specificity of this poison might make it useful in the treatment of certain painful affections of the 5th nerve. It has been tried out extensively in Germany under the trade name of 'chlorietylen' and more recently in France. Dr DeBusscher spoke of his experience with it in the clinic here, and said he had come to the conclusion that it was of great benefit in trigeminal neuralgia and occasionally beneficial in certain tics of the facial nerve, but that its use in migraine was disappointing. He pointed out that the drug was dangerous and had to be handled with great care. It is capable of producing extensive necrosis of the mucous membranes as well as severe systemic symptoms. If however the inhalations are taken with proper precautions from amounts not exceeding 20 drops no ill effects occur. In the discussion, Dr J H Means said that chlorietylen had a field of usefulness in certain cases of trigeminal neuralgia which were not completely relieved by operation. He also stressed the fact that it is a drug to be treated with the greatest respect because it is potentially very dangerous. Dr Horrax said that his experience with the drug had been favorable in certain selected cases.

Dr J S Hodgson next spoke on the subject of cordotomy. While this operation he said has been

practised for some time it owes its present standing largely to the researches of Dr Fraser of Philadelphia. Dr Hodgson showed slides illustrating the anatomy of the spinal cord and the steps in the operation. The general aim of the operation is the division of the anterior lateral bundles which carry most of the pain fibres. Dr Hodgson said that the operation was not technically difficult but that no didactic rules could be laid down for the depth of the cut into the cord, this being a matter of individual judgment and experience. He said that this operation had a distinct field of usefulness in cases suffering from severe pain arising from the lower portion of the body and not easily controlled by drugs, and mentioned its use in the following conditions: metastatic or primary malignancy of the spinal column, malignancy of the pelvis and the gastric crises of tabes. In discussion Dr Aver spoke chiefly of its use in tabetic crises. He had seen a number of patients operated upon by different neurological surgeons and in the great majority of cases the results had been highly gratifying. He suggested that the failures in certain instances might be due to the fact that the section had not been made at a sufficiently high level. Drs Mixer and Horrax told of their experience with the operation which was very favorable in properly selected cases.

Dr W J Mixer discussed his experience with the treatment of angina pectoris by alcohol injections of the upper thoracic sympathetic chain. These injections are made in the dorsal thoracic region a short distance lateral to the spinal column about 5 needles are inserted in accordance with a technique which he described in some detail and a preliminary injection with novocaine is made after waiting a short time alcohol is injected. The procedure is very much simpler than operations upon the cervical sympathetic ganglions and the danger is less. Dr Mixer thought that the relief from pain was at least as good as that obtained by the more radical procedures. The method has the disadvantage that it has to be repeated from time to time.

Dr H C Solomon the last speaker of the evening discussed the use of tryparsamide and malaria in the treatment of neuro-syphilis. He said that it was difficult to generalize about the results of treatment of neuro-syphilis because the pathological picture showed such marked variations. In discussing the treatment of general paresis he divided the cases into two groups: a group of late cases in which the most that could be hoped for was an arrest of the disease and a group of early cases in which striking improvement was very frequently obtained. The modern method of treatment consists of the use of both tryparsamide and malaria. Neither is used to the exclusion of the other both having a very definite place in therapeutics. Dr Solomon said he wished to stress the importance of early diagnosis. In the older days when so little could be done in the way of treatment, it seemed rather futile to insist on an early diagnosis but with modern methods early diagnosis might well mean cure of the disease.

This meeting concludes the Staff Meetings for this winter. The next meeting will be held in October.

MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY

The Middlesex South District Medical Society held its Annual Meeting on Wednesday April 18th at the Commander Hotel Cambridge.

The annual oration was delivered by Dr Waiter

B Cannon Subject "Reasons for Optimism in the Care of the Sick"

John M Birnie, President of the Massachusetts Medical Society was present at the meeting and gave a short address

Dinner was served at 1 P M The meeting was attended by 155 members

A more complete report of this meeting will appear in our next issue

BRISTOL SOUTH DISTRICT, THE MASSACHUSETTS MEDICAL SOCIETY**SPECIAL MEETING**

A special meeting will be held in the New Bedford Public Library, Friday evening April 27, at 8 30 P M

This meeting is called for the purpose of "Cancer Week Observance" and Dr Ernest M Daland, of the Staff of the Huntington Memorial Hospital, Boston will speak upon the subject of Cancer, as it interests the Medical Profession.

GEORGE C BORDEN, *Secretary*

ESSEX NORTH DISTRICT MEDICAL SOCIETY

By invitation the Eighty Seventh Annual meeting will be held at Haverhill Country Club, Brickett Hill Gale street, Haverhill (telephone 1332) Wednesday, May 2

Attention, Golfers You are cordially invited to try your skill This course has a good reputation and is 18 holes Come early and bring your sticks The tennis court extends a welcome also Business meeting 12 m sharp

Dinner, 1 p m sharp

These speakers follow the dinner

1 "Recent Advances in Neurology," Henry R. Viets M.D. of Boston, Instructor in Neurology in Harvard University Medical School (30 minutes) This will be discussed by Elmer S Bagnall, M.D., of Groveland

2 "Treatment of Fractures of the Long Bones" Arthur W Allen, M.D. of Boston, Instructor in Surgery at Harvard University Medical School (with lantern slides) (30 minutes)

3 James S Stone M.D., of Boston, Executive Secretary to the President of the Massachusetts Medical Society, will speak on the "House Fund" i.e. the plan to purchase, by subscription, a building as a permanent home for the State Society to accommodate all its activities Discussion on above matters is invited (5 minutes)

The Golf Club is yours for the day Make it a real day and come early

Note Follow north on Main street from Haverhill City Hall, to Walnut square turn right on North Avenue to Gile Street to Brickett Hill Distance from City Hall is 2½ miles

Meeting of Censors will be held at Hotel Bartlett, 95 Main Street, Haverhill (tel 3430) on Thursday, May 3 at 2 P M sharp Candidates should present diplomas to the Secretary one week in advance

ADELBERT M HUBBELL, M.D. *President*
J FORREST BURNHAM, M.D., *Secretary*,
567 Haverhill St., Lawrence Mass

April 19, 1928

CENSORS MEETING FOR THE MIDDLESEX SOUTH DISTRICT

The Censors for the Middlesex South District will meet to examine candidates for Fellowship on Thursday, May 3rd, at the Colonial Club, 20 Quincy Street, Cambridge, at 4 P M

Prospective members should present their applications to the Secretary and show evidence of graduation from a medical school at least one week before the meeting of the censors

S M BIDDLE, M.D., Sec

885 Massachusetts Avenue,
Cambridge, Mass

SOCIETY MEETINGS

April 26—Massachusetts Association of Boards of Health For detailed notice see page 472

April 26, 27, and 28—Fifteenth Reunion of the Peter Bent Brigham Hospital Alumni Complete notice appears on page 475 Issue of April 19

April 30—Annual Meeting of the Massachusetts Tuberculosis League For complete notice see page 471 issue of April 19

May 1 2—American Climatological and Clinical Association See page 474 issue of April 19 for complete notice

May 10 11—Conference on Rheumatic Diseases Detailed notice appears on page 472 Issue of April 19

June 18 20—Meeting of the American Association for the Study of Goltz See page 425, issue of April 12 for complete notice

June 18 22—Convention of the Catholic Hospital Association Complete notice appears on page 1597 Issue of February 16

DISTRICT MEDICAL SOCIETIES**Bristol South District Medical Society**

April 27—Detailed notice appears elsewhere on this page

Essex North District Medical Society

May 2, 1928 (Wednesday)—Annual meeting at Haverhill 12 30 P M. at the Haverhill Country Club Brickett Hill Gile Street Haverhill. Complete notice elsewhere on this page

May 3, 1928 (Thursday)—Censors meet for examination of candidates at Hotel Bartlett, 95 Main Street Haverhill at 2 P M Candidates should apply to the Secretary J Forrest Burnham M.D. 567 Haverhill Street Lawrence at least one week prior

Essex South District Medical Society

May 3 (Thursday)—Censors meet at Salem Hospital for the examination of candidates at 3 30 P M Candidates should apply to the Secretary Dr R E Stone Beverly at least one week prior

May 8 (Tuesday)—Annual meeting Detailed notice appears on page 1437 issue of January 26

Middlesex South District Medical Society

May 3—Censors meeting Detailed notice appears above

Norfolk District Medical Society

May 3—Censors meeting Roxbury Masonic Temple 4 P M Applications will be mailed by the Secretary upon request Detailed notice appears on page 271 issue of March 22

May 8—Annual meeting Details to be announced

Suffolk District Medical Society

April 27—Special meeting Detailed notice appears on page 471 issue of April 19

May 3—Censors Meeting

The Censors of the Suffolk District Medical Society will meet for the examination of candidates at the Medical Library No 8 The Fenway Thursday May 3 1928 at 4 o'clock

Candidates should make personal application to the Secretary and present their medical diploma at least one week before the examination

ARTHUR H CROSBIE M.D. *Secretary*

520 Commonwealth Avenue Boston

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear

BOOK REVIEWS

The Mechanics of the Digestive Tract An Introduction to Gastroenterology By WALTER C. ALVAREZ, M.D. Second Edition New York 1928 Paul B. Hoeber, Inc. Pages 447 Illustrations 100

The first edition of this book developed as an elaboration and an amplification of a lecture given in 1920 before the American Roentgen Ray Society. In the book preface, the author stated that in 1913 while doing some work on the absorption of gases injected into loops of intestine I noticed differences in irritability in different parts of the bowel that is, the jejunum reacted actively to distention while the ileum generally responded but little. It promptly occurred to me that this graded difference in irritability might account for the downward progress of food in the bowel because it seemed reasonable to suppose that material would have to move from the more irritable and active regions to the less irritable and active ones. While attempting to show these differences in irritability with excised segments of intestine I found that the rate of rhythmic contraction of the muscle is graded downward from the pylorus to the ileocecal sphincter. Remembering how much the heart specialist has profited by the careful study of conduction along a similar rhythmic gradient from the sinus node to the ventricle I was filled with the hope that a careful analysis of the gradient found in the bowel might throw light on the mechanism of peristalsis and might put more system into the science of gastroenterology.

It was found that the idea of a gradient of forces which can be flattened or reversed offers the best, the simplest, and often the only explanation for many of the phenomena observed by the physiologist, the internist, the roentgenologist and the surgeon.

The author realized however that he must in all fairness to my readers emphasize the fact that much of what is written in Chapters IX and X is purely suggestive. Viewed thus and read with possible reservations and an open mind the stimulating contents of this book should be familiar to all who have occasion to work at all in the field of gastroenterology and there are few who do not.

In the preface to this second edition the author states that this is practically a new book in plan and scope. The first edition was little more than a detailed statement of the gradient theory with its bearing on the problems of gastroenterology. This one represents a determined effort to make readily available to thoughtful practitioners such information about the mechanics of the digestive tract as they need daily in their struggles to improve their diagnostic and therapeutic technique.

The author considers that the bibliography of the present volume containing 900 titles is probably the best part of the book. One notes with mild regret and some surprise the complete absence from this extensive bibliography of any titles by such well known workers in gastroenterology as for example R. Walter Millis. The author however states that the literature is now so enormous that even a fast reader can hardly keep up with it and from those whose good work I have slighted I can only beg forgiveness and a reprint.

The author draws an interesting comparison between progress in gastroenterology and progress in cardiology. He then asks the question: Are we in

gastroenterology any more awake today than were the cardiologists in 1900 that is better prepared to recognize promptly the importance of epoch making papers published in journals devoted to physiology and anatomy? To this, he replies: I hope we are, and I think it augurs well for the future that more and more books are now appearing in which the results of research in special fields are so well epitomized and reviewed as to make them readily available for use by practitioners of medicine.

It may be of interest to note that in the five years since the appearance of the first edition of this work the idea of a gradient of activity down the intestine has received considerable support from workers in various parts of the world and a number of my early observations have been confirmed. The whole gradient idea has been strengthened by the work of Murray, who has shown that even in tissue cultures, muscle cells from the embryonic auricle will beat many times faster than will those from the ventricle. This must mean as Dr. Child and I have always felt, that the gradients are not due purely to functional adaptation during life but that they are basic and built into the very structures and chemical composition of the individual cells.

If the downward gradient is of any value to us in health it follows as a corollary that upsets in it should produce the symptoms of disease. As will be seen later such upsets have been observed in animals and it is highly suggestive that most of these animals were sickly, some of them were refusing food and others were even vomiting. The main question then before us is: are these upsets ever present in the digestive troubles of man and if so are they responsible for the disturbances in motility which are then observed?

Unfortunately these questions cannot yet be answered with certainty. Other factors may easily be more important in some cases. On account of these gaps in our knowledge much of what follows must of necessity be purely theoretical or based on analogy. It seems to me however that so long as the reader will keep separate in his mind that which is proved and that which is merely suggested it can do no harm to set forth in a logical manner the various ways in which the gradient might theoretically be upset, and the ways in which such upsets might affect the motility of the tract.

Some may ask in which way can the idea of a gradient altered by disease influence our methods of treatment? The answer is that so far little has been done because therapists have not been thinking along these lines. Later we may be able to get drugs which will help in restoring the normal gradient, perhaps as calomel does but without unpleasant by-effects. In the meantime there is a diet which is very helpful probably because it does not lead to conflicts with disordered gradients.

At the close of his chapter entitled 'Practical Applications of the Gradient Idea' the author sets forth in detail the 'smooth diet' which he has found helpful.

Unquestionably one of the best places to study functional activities of the living human intestine and colon is in the dark room before the fluoroscope. A more extensive familiarity with the extraordinary diversity of action which is displayed by the human colon as seen before the fluoroscope might well have suggested alterations in some of the statements made

by the author with regard to the habits of the ileo cecal sphincter, and the colon. Fluoroscopic observation of the colon extending over a period of some fifteen years, would for example make it possible for the reviewer himself to point out one or two alterations which might to advantage be made in the text.

The reviewer, however, is not minded to find fault. On the contrary, he takes pleasure in unreservedly recommending this book to thoughtful students of medicine, for firstly, it contains a very large amount of mental pabulum which deserves adequate mental mastication, digestion, and absorption. Secondly, no intelligent person can read it without being stimulated in the direction of inductive thinking and from this point of view alone the book is worth while.

Gastroenterologists may well offer up a prayer that more patients may become convinced of the logic of the author's quotation from Josh Billings to the effect that "I hav finally kum to the konklusion that a good reliable sett ov bowels iz wurth more tu a man than enny quantity ov brains."

Asthma, Its Diagnosis and Treatment By WILLIAM S. THOMAS, M.D. Paul B. Hoeber, Inc., New York.

Although the aim to make this book a practical guide to the management of asthma patients, the volume is only partly successful. There is little said about present day problems concerning the etiology and mechanism of allergy and many clinical aspects are omitted, so that the book is of little value for reference. History taking is described and given some prominence, but the lack of good case reports to illustrate the method is unfortunate.

Skin tests are described in detail and the list of test substances, presented without discussion and without any classification of the patients, gives the impression that most patients react to them. The list of plant pollens is long, but is not analyzed as to the relative importance of one plant over another.

The best chapter is devoted to the use of vaccines and here we do find a few case reports and a statement of end results to indicate the prognosis in this particular series.

The list of 325 references arranged alphabetically at the end of the book is of real value in itself, but its effectiveness is immensely curtailed by the deliberate omission (to avoid confusion) of numbers after authors names or after text clauses which might indicate the correct reference.

The printing is on heavy shiny paper and the binding is poor. The 233 pages of text are padded with fifty blank pages.

The Hebrew Physician (Harofeh Holvree) Dr. MOSES EINHORN and DR. ASHER GOLDENSTEIN, Editors. Volume 1, Number 1. New York City. January, 1928.

The first number of *The Hebrew Physician (Harofeh Holvree)*, a medical journal in Hebrew appeared in January, 1928. It is the publication of a group of physicians in New York to whom the Hebrew language has never ceased to be a living language. It is the only medical journal published in Hebrew outside of Palestine, though the projectors speak of similar groups of Hebrew-speaking physicians elsewhere who are planning a similar effort in their respective countries.

Following are some of the matters treated in this

volume. The question of Hebrew medical terminology, polycystic kidney, a new duodenal tube and its use, the sequelae of osteomyelitis, whooping cough, correlation between physical and X-ray findings in some pulmonary disease, acute hemorrhagic pancreatitis, book reviews, bibliography (tuberculosis among Jews). Some of the papers are illustrated and at the end there is a Hebrew-English medical vocabulary.

This venture in medical journalism is certainly interesting. It is, however, not unique for there have been medical publications in foreign languages in this country before. It is a manifestation of the hold which the renaissance in Jewish culture is having upon Jewish people throughout the world. How many numbers will this publication live?

The Medical Department of the United States Army in the World War. Volume VII, Training pp. 1211. In two sections. Part I, Training in the United States. Part II, Training in the American Expeditionary Forces.

In the brief introduction to this, the seventh volume of the World War series, we are told that when the United States entered the war the army medical personnel was not enough even for a skeleton force to take in and assimilate the great number of physicians needed to adequately care for the millions that were to be mobilized and intensively trained for their work abroad. In the first part of the book the history and workings of the great training camps in this country is given. Many illustrations pertaining to camp sanitation add interest to this section. The reader, as he follows the different chapters, is made to see the physician's gradual change from his civilian environment, as he becomes *au fait* with all that concerns the military branch of his art.

The second part of the volume, dealing with the training overseas is no less interesting, naturally the subject matter is so great that it is impossible to speak of this in any but general terms. Those sections of this part of the work dealing with the instruction concerning fractures, wound bacteriology, the modern treatment of war wounds and the history and training of the resuscitation teams and their transfusion work, which accomplished so much are of particular interest.

This volume of the World War series should be read by all who wish to learn what the Medical Department of the Army accomplished in a brief time, turning city specialist and country practitioner alike into the army medical officers of which this country is so justly proud.

Mechanics and Chemistry of Human Body By O. BORO SCHEILLBURG. Scheillburg Institute, Inc. New York City, 1928. pp. 50.

This small book describes the physiology of the colon, the biology of the cell and the technique of colonic irrigation. The opinions given on these subjects are largely the result of the author's experience as references are not given. One section on the application of colonic therapy in internal medicine, is written by H. W. Rothman. Several roentgenograms of the colon at varying periods after the injection of a barium enema are shown.

The New England Journal of Medicine

VOLUME 198

MAY 3, 1928

NUMBER 11

ORIGINAL ARTICLES

WHAT WOULD YOU DO IF YOU HAD A PEPTIC ULCER?*

BY REGINALD FITZ, M D †

INTRODUCTION

THE treatment of peptic ulcer is a subject which has recently received a great deal of publicity. At a medical meeting not long ago, one of our eminent surgeons prefaced his remarks by saying "After listening to these papers and this discussion, I wonder what would be the state of mind of an inexperienced young physician seeking light as to the proper plan of handling gastric and duodenal ulcers. I do not know of any situation in surgery which seems so completely mixed up as is the question of gastric and duodenal ulcer."

Certainly the problem of the best treatment of these cases is at present unsettled. One hears surgery recommended, and listens to warm supporters of operative procedures like pyloroplasty, gastro-enterostomy or even sub-total resection of the stomach, on the other hand are the advocates of medicine who emphasize the hazards and failures of surgery, who sing the praises of medical therapy and describe drugs and diets which seem to cure many cases. On last analysis, therefore, in advising patients with these disorders, any skeptical-minded physician seems driven to rely upon his own experience. The literature on the subject and other people's ideas are so diverse as to be of but little help.

During the past four years, a great many patients with gastric or duodenal ulcer have come to the Peter Bent Brigham Hospital. I have had the opportunity to observe thirty-three of these cases at some stage in their careers, to take their histories, to direct their immediate treatment and to follow them up at later intervals. I have tried to analyze this experience in order to show how interesting are the medical problems brought up by such cases and, especially, how the careful clinical study of even a small group may give one fairly clear-cut ideas in regard to their appropriate management.

CLINICAL MATERIAL

The cases under consideration consist of twenty-two male and eleven female patients.

From the Medical Clinic of the Peter Bent Brigham Hospital
Presented before the Essex North Medical Society at Haverhill
Massachusetts, on January 4, 1928.

†For record and address of author see "This Week's Issue,"
page 59.

Each of the men and ten of the women had duodenal ulcer, one of the women had gastric ulcer. The diagnosis was established by radiological evidence or operative findings. The cases fell into two definite groups. Eighteen illustrate the effect of fairly long-continued medical treatment carried out according to a definite policy, fifteen show the result of various operations.

THE MEDICAL MANAGEMENT OF PEPTIC ULCER

The medical management of uncomplicated peptic ulcer in America today varies considerably in different localities but in general is of two kinds. A case may be advised a period of hospitalization for three or four weeks, during which time he is given a diet largely of milk and cream and eventually a soft solid diet. During the time of strict supervision, the gastric acidity is systematically neutralized by various alkalies and the effects of any pyloric spasm is overcome by frequent gastric lavage. After the period of hospitalization, the patient is encouraged to continue for a long time with small and frequent feedings, alkalies, and may even be taught how to wash his own stomach. The immediate effect of such treatment is almost always very beneficial.

On the other hand, a great many cases get along fully as well on less drastic measures. A simple, easily digested diet, taken at home with or without alkalies, often proves very helpful. Surprisingly good results can thus be obtained.

My cases receiving medical management were not so interesting from the point of view of the technical details of their treatment as they were in other respects.

There appeared to be a very distinct difference between men and women in their reaction to peptic ulcer. None of the women showed any tendency to hemorrhage, while this complication was not at all uncommon in the men. Most of the women received immediate benefit from dieting and became symptom-free with great promptness. They found it easier to continue on a strict regular diet than did the men made better patients, and were far less rebellious.

The psychic factor was very apparent in both sexes. One woman was symptom-free except when she quarreled with her husband. This, unfortunately, was a not uncommon occurrence.

Another, a professional public speaker, had prostrating symptoms whenever she developed stage-fright at addressing an audience. Business worries induced symptoms quite regularly in both sexes.

The effect of fatigue was very noticeable in all cases. A man got along comfortably with diet until he began to work for long hours in a high temperature room. Then he had a hemorrhage. An overworked school mistress was sent to the country for a month and, by leading the simple life out-of-doors, gained ten pounds and remained symptom-free for two years. The more carefully the history was taken from the fatigue point of view, the more apparent was the importance of this factor.

The psychological reaction of the cases toward their diseases was most instructive. Ulcer-bearing patients are great medical shoppers; they trade around from doctor to doctor and follow medical quotations with the same enthusiasm and vim that a broker follows the stock market. Most of the cases in my group had passed from the hands of their family doctor to one of the gastro enterologists and thence by various stages to the Peter Bent Brigham Hospital. Several, I know, passed, thence, back again through various stomach specialists or other hospitals to their original family physicians. One patient is firmly convinced that after having tried every other medical treatment, she was finally cured by an osteopath. Another went to Germany and, after the effect of a six weeks' rest in a sanitarium wore off, returned to our clinic for a brief period and, when last heard from, was trying assiduously some sort of a vegetable cure.

People with ulcers can scarcely be blamed for acquiring a peculiar mental attitude toward their illness. In the first place, the disease is notoriously chronic and tends to spontaneous remissions which may last for long periods of time. A patient goes to Dr. A. and obtains relief for several months. He has a return of symptoms, becomes discouraged and goes to someone else. And so it goes.

Another reason why such patients consult a succession of doctors is because the diagnosis of ulcer is not always easy. Physicians, as a rule, tend to lay too much stress upon the infallibility of the X-ray. Perfect X-ray machines can be readily obtained, but perfect roentgenologists are rare. Several ulcers in this group had been overlooked by very admirable clinicians because the X-ray report was negative, and their bearers were treated for "nervous indigestion." The symptoms continued, the patients became discouraged and tried other doctors.

The history is of paramount importance and cannot be taken in a few minutes. The ulcer case should give a history of indigestion characterized by hunger-pain, relieved by food or alkali, lasting for a long interval of time and with spontaneous periods of freedom from discomfort. The immediate attack should be much the same

day in and day out. The patient breakfasts and goes to work. Two or three hours later, he develops a gnawing pain in the pit of the stomach above the umbilicus, which he learns to relieve by soda or a little lunch. He comes home thoroughly tired and cross and goes to bed, often to wake up at two or three in the morning with the same gnawing pain. At this time he may have a little nausea. He may regurgitate a little acid which puts his teeth on edge, or he may vomit a considerable quantity of acid-tasting material containing food remnants. Vomiting often gives so much relief that some of the cases acquire the habit of inducing it. Chronicity, periodicity, and food and alkali relief are the three cardinal symptoms.

During an attack of ulcer activity, there is often but little loss of weight, unless true pyloric obstruction develops. The bowels become constipated and irregular. The patient's whole life becomes demoralized.

Gastric analysis is almost as important a diagnostic measure as is a good history. Yet very few doctors do routine gastric analyses on their patients with "indigestion." An active peptic ulcer often has an associated hyperacidity. Certain stomachs will allow the passage of barium when they will not allow the passage of ordinary food. Since pyloric spasm occurs frequently, and produces more or less food retention, it should be recognized.

Finally, of course, and fortunately the X-ray picks up the great majority of cases. The important information is obtained by fluoroscopic examination rather than by the film. It is to be remembered, however, that no roentgenologist is infallible. Given a case with a typical history, with hyperacidity and gastric stasis as demonstrated by gastric analysis and the chances are that the patient has an ulcer irrespective of the X-ray report.

I have tried to group the cases treated by diet chronologically, and thus to obtain a fair idea of what the results so far have been. It is perhaps worth mentioning that only two cases were hospitalized, the others being given written dietetic instructions and treated in their homes. Alkali was used freely. Great stress was laid upon the importance of rest periods each day, simple living, regular exercise and the avoidance of worry.

The patients ranged in age from twenty-eight years to seventy-five, included twelve men and six women. One case had marked barium obstruction and two others moderate obstruction, the duration of symptoms ranged from twenty years or more to a few months.

The most interesting fact brought out in the table is that all except one of the patients have remained entirely satisfied with medical treatment. There may have been no striking cures, but on the other hand, there have certainly been no fatalities. The more recent cases count for little as the majority of ulcer cases, apparently,

Figure 1

No	Age	Sex	Diagnosis	Onset of symptoms before beginning treatment	Date of 1st exam- ination	Date of last note	Remarks
1	75	M	Duodenal Ulcer	16 years	1912	15 years later	No significant symptoms for 15 years Has gained about 60 pounds
★ 2	53	M	Duodenal Ulcer	Approximately 7 years	1923	4 years later	I feel fine and have not dieted for about a year "
3	39	M	Duodenal Ulcer 25% Residue	"Always had a weak stomach " Onset of symptoms undeter- mined	1923	4 years later	No symptoms Feels well Has gained 15 pounds
4	38	F	Duodenal Ulcer	Never had a strong stomach Onset of symptoms undetermined	1924	3½ years later	"Stomach behaves itself beautifully I am stronger than I have been in years "
5	54	M	Duodenal Ulcer	Approximately 12 years	1924	3½ years later	Feeling better than I have for years and have no indigestion Has gained 7 pounds
6	48	M	Duodenal Ulcer	Approximately 6 years	1924	3½ years later	Well so long as he does not grossly over-eat Has gained 6 pounds
★ 7	45	M	Duodenal Ulcer	Approximately 20 years	1925	3 years later	"Never felt better in my life Take no medicine Have a good appetite and no indigestion "
8	46	F	Duodenal Ulcer 10% Residue	Approximately 18 years	1926	2 years later	Still must diet carefully Has gained 8 pounds
9	34	F	Duodenal Ulcer	Approximately 2 years	1926	1½ years later	Well so long as she does not grossly over-eat Has gained 6 pounds

★ Received a period of hospital treatment

Figure 1 continued

No	Age	Sex	Diagnosis	Onset of symptoms before beginning treatment	Date of 1st exam- ination	Date of last note	Remarks
10	74	M	Duodenal Ulcer 10% Residue	Approximately 1 year	1926	1½ years later	Has no indigestion
11	70	M	Duodenal Ulcer Large Residue	Approximately 11 years	1926	1½ years later	"Feeling perfectly well " Has gained 20 pounds
12	32	M	Duodenal Ulcer	"For a long time Onset of symptoms undetermined	1926	1 year later	"Slightly improved " Has gained 4 pounds
13	39	F	Duodenal Ulcer	Approximately 10 years	1927	1 year later	Has no indigestion Takes no medicine Has gained 15 pounds
14	47	M	Duodenal Ulcer	Approximately 1 year	1927	9 months later	Unimproved Has lost 11 pounds
15	28	F	Duodenal Ulcer	Approximately 2 years	1927	3 months later	Much improved
16	52	F	Duodenal Ulcer	Approximately 9 years	1927	3 months later	Much improved Has gained 10 pounds
17	32	M	Duodenal Ulcer	Approximately 3 years	1927	3 months later	Much improved
18	57	M	Duodenal Ulcer	"For a long time " Onset of symptoms undetermined	1927	2 months later	Much improved Has recovered from recent hemorrhage

RESULTS OF MEDICAL TREATMENT IN PEPTIC ULCER.

will receive marked temporary benefit from almost any form of treatment that appreciably changes the habits of living. In the eight cases which have been followed for two years or more the results have been uniformly very good.

Case 1 is especially important as having been followed for the longest period of time.

The patient a man is now seventy five years old and as can be seen is a hale and hearty specimen. A little over twenty five years ago when he was working very hard in business he went through a long period of nervous indigestion gradually accompanied by loss in weight from 172 to 119 pounds and finally culminating in a large vomiting of blood. He consulted my father in 1912 who told him that

he had an ulcer. By way of treatment, the patient was given a simple diet and occasional doses of alkali. The most important point, however, was that he was sent to California for six months, giving up business, clubs, tobacco and alcohol, and was encouraged to lead a simple outdoor life with plenty of fresh air, sunshine, food and recreation. He followed his instructions to the letter. He gradually regained his weight, after six months was back in

attack of heart burn, easily relieved by soda, and has considered himself as well as anybody. A X-ray examination, made a few days ago, shows a ulcer deformity of the duodenum still.

It seems a fair statement that a great many peptic ulcer cases—even those of years' standing and with marked pyloric obstructions, as judged by inability of the stomach to evacuate barium—may obtain sufficient symptomatic relief to enable them to live normally for a long period of time under a simple but systematic form of diet when, at the same time, due attention is paid to their individual habits of life, and to their fears and worries. An additional advantage of such a medical treatment is that if it proves unsuccessful, operative measures can be tried later.

THE SURGICAL TREATMENT OF PEPTIC ULCER

The fifteen cases which received operative treatment may be divided into two groups. There were seven which received great benefit from the operative procedures carried out. There were eight which even the most ardent supporter of surgery could not regard as successful. One of the latter was advised against operation but insisted on having it performed. The patient died within a few days of bronchopneumonia. This case is mentioned merely to emphasize the fact that the surgical treatment of peptic ulcer carries with it a definite mortality.

As can be seen, the improvement in each of the cases doing well was noteworthy. The first case is interesting as being the only one seen a decade after the original operation. During the interval the patient had felt splendidly until six months before coming to the Brigham Hospital, when she had begun to be troubled by an indefinite indigestion, not especially typical of ulcer,

Figure 3



FIGURE 2. A Patient with Duodenal Ulcer after Fifteen Years Medical Treatment.
Weight before treatment 130 lbs.
Weight fifteen years later 175 lbs.

business and for the last fifteen years has lived as he chose. He has had no indigestion except an occasional

No.	Age	Sex	Diagnosis	Onset of Ulcer Symptoms before Operation	Type of Operation	Date	Date of last note	Remarks
1	44	F	Duodenal Ulcer and Cholelithiasis	Many years	Gastro-enterostomy Cholecystectomy	1917	10 years later	Has gained 25 pounds since operation.
2	43	M	Duodenal Ulcer	Many years	Gastro-enterostomy	1922	5 years later	In perfect health since operation. Has gained 50 pounds.
3	57	F	Duodenal Ulcer	Approximately 5 years	Pyloroplasty (Finney Method)	1923	4 years later	In perfect health since operation. Has gained 15 pounds.
4	44	M	Duodenal Ulcer	Approximately 1 year	Transection of pylorus and duodenum Gastro-enterostomy	1925	2 years later	In perfect health since operation. Has gained 32 pounds.
5	63	M	Duodenal Ulcer	Many years	Transection of pylorus and duodenum Gastro-enterostomy	1926	1 year later	In perfect health since operation. Has gained 30 pounds.
6	66	M	Duodenal Ulcer	Many years	Gastro-enterostomy	1926	1 year later	In perfect health since operation. Has gained 7 pounds.
7	60	F	Gastric Ulcer with Hour-Glass Deformity	Many years	Sleeve resection of ulcer	1926	1 year later	Steady improvement since operation. Has gained 30 pounds.

SUCCESSFUL RESULTS OF SURGERY IN THE TREATMENT OF PEPTIC ULCER

but annoying enough to require attention. She looked well, had a negative physical examination, negative gastro-intestinal X rays and a gastric juice which did not contain free hydrochloric acid.



FIGURE 4. A Patient with Duodenal Ulcer Ten Years after Successful Surgical Treatment.
Weight before operation 125 lbs.
Weight ten years later 140 lbs.

During the last six months she has taken dilute hydrochloric acid regularly with complete disappearance of symptoms. She wonders, however, whether she will need to continue taking acid all the rest of her life. At present she says, when she fails to take it, she has an immediate return of symptoms.

This brings up an important point. One of the aims of the operative treatment of peptic ulcer is to overcome hyperacidity, and successful gastro-enterostomy is followed by achlorhydria. Is the long-continued absence of hydrochloric acid in the gastric juice a good thing? May it not often be eventually followed by indigestion as in this case? Is it wise to supply an ulcer-bearing patient with hydrochloric acid after an operation has been performed to check the formation of this acid? May not such treatment cause the flare-up of an old ulcer or the formation of a new one? Questions of this sort necessarily come to mind, illustrating the importance of carefully following-up these cases over long periods.

Nothing is more gratifying than to watch the cases which have been successfully operated upon improve. They immediately gain weight and strength and become optimistic, cheerful members of society instead of crochety, sour-

faced pessimists. They acquire this improvement with a minimum of effort.

The patient (see Fig 5), after having had chronic indigestion for years and becoming progressively feeble and increasingly discouraged, has been completely made over by surgery. He fills out his clothes again, is able to work and as he expresses it feels better than he has felt for forty years. He eats everything without discomfort. He is a typical example of a good surgical result a year after an operation.

There is no question therefore but that the successful operative treatment of ulcer may rapidly afford brilliant results. If the effects were always fortunate and were permanent if there were no fatalities and no post operative complications, this form of treatment would receive more unqualified support.

Figure 6 records the data from seven cases which were operated upon and were not so lucky. Certain of the cases need further description than was possible in the table.

Number 1, a business man and especially intelligent, has a large family. In 1911, he was operated upon and subsequently had several large hemorrhages. Since 1926 or for approximately two years he has been dieting carefully and is now feeling fairly well. He considers himself at best only about 75% efficient, tires easily, is constantly afraid of another hemorrhage, can find no life insurance company to accept him as a risk and on the whole does not feel that his operation was strikingly successful.

Number 2, also a man, illustrates a series of possible surgical misfortunes for besides having had two operations and several hemorrhages, he has developed diabetes. He is feeling well at present but he must diet carefully, take alkali powders and insulin. In view of his present predicament he would have elected medical treatment rather than surgery had it been possible.

Number 3 is a young woman. Her present symptoms are not typically those of ulcer and there is a large functional element in her case. She considers that the operation has not helped her.

Number 4, another woman, had advanced mitral stenosis. It was impossible to determine whether her symptoms were predominantly due to ulcer or heart failure at the time of her stay at the Brigham Hospital. The symptoms of indigestion continued to the time of her death and she failed to gain weight. Possibly on account of her cardiac complication it is unfair to consider her case as typical of a surgical failure.

Number 5, a man, obviously had an incomplete operation and may therefore be properly excluded from the group of unfortunate end-results. At present, he is improving satisfactorily under diet.

Number 6, a man, is of interest as affording a contrast between medical and surgical treatment. For six months before operation he was



Before Operation
Weight 130 lbs



One Year After Operation
Weight 160 lbs

FIGURE 5 A Patient with Duodenal Ulcer before and a year after Successful Surgical Treatment

treated by diet with considerable benefit. He gained twelve pounds in weight and felt better than he had felt for several years. He over-worked, had a return of symptoms, a hemorrhage, and was then operated upon. He again picked up and felt well for three years, when there was another hemorrhage. Apparently the operation afforded him relief for a longer time than did the diet, though it failed to cure. Putting both groups of cases together and discarding numbers 3, 4 and 5 of the unsuccessful lot as being, perhaps, unfairly included, one can

Figure 6

No	Age	Sex	Diagnosis	Onset of Ulcer Symptoms Before Operation	Type of Operation	Date	Date of last note	Remarks
1	38	M	Duodenal Ulcer	Many years	Gastro-enterostomy Ulcer infolded	1911	16 years later	Only a moderate degree of health since hemorrhages in 1914, 1924 and 1926. X-Ray in 1926 suggested jejunal ulcer. Hydrochloric Acid in the Gastric Juice.
2	58	M	Duodenal Ulcer	Many years	Gastro-enterostomy	1916	11 years later	Well for about 2 years after operation. Then frequent hemorrhages. Jejunal ulcer resected in 1920 and gastro-enterostomy closed. About two years later frequent hemorrhages. Since 1922 treated by diet with gradual improvement except for hemorrhage in 1923. Gastric Juice in 1922 contained HCL.
3	24	F	Duodenal Ulcer	Many years	Excision of ulcer and pyloroplasty	1923	5 years later	Has lost weight steadily since operation and has persistent chronic indigestion. X-Ray shows irregular sphincter of pylorus and duodenum but no stasis.
4	40	F	Duodenal Ulcer	Many years	Excision of pylorus and Gastro-enterostomy	1922	4 years later	Persistent symptoms of chronic indigestion without gain in weight until death. 7-Rays in 1924 showed deformity at anastomosis possibly due to jejunal ulcer though hydrochloric acid was absent in gastric juice. Death due to congestive failure from rheumatic heart disease with mitral stenosis.
5	50	M	Duodenal Ulcer	Approximately 5 years	Drainage of abscess from perforated ulcer	1924	3 years later	Well until a few months ago. Then return of ulcer symptoms. X-Ray shows duodenal ulcer. Stool gives +++ guaiac test.
6	32	M	Duodenal Ulcer	Approximately 6 years	Transsection of pylorus and duodenum Gastro-enterostomy	1924	3 years later	Well until recently. Then copious hemorrhage. Gastric Hydrochloric Acid 60. X-Rays negative.
7	60	M	Duodenal Ulcer	Approximately 15 years	Gastro-enterostomy	1926	1 1/2 years later	Well for only a few weeks. Then had sudden fainting spell apparently due to hemorrhage. X-Ray now suggests jejunal ulcer. Gastric Juice has free HCL.

SUCCESSFUL RESULTS OF SURGERY IN THE TREATMENT OF PEPTIC ULCER.
SUCCESS

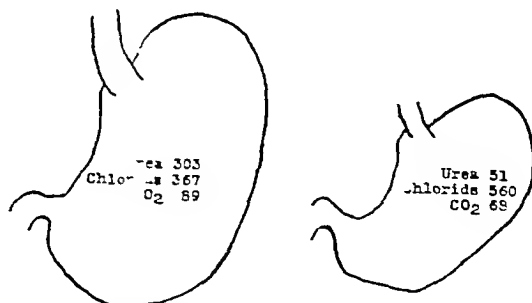
sav that out of these eleven peptic ulcer cases treated by surgical methods and subsequently observed, seven were signally improved and four were not. Of three cases examined ten or more years after the original operation one was well while two had continued to suffer from repeated intermittent hemorrhages suggesting the presence of an active ulcer. Of six cases examined less than three years after the original operation four felt perfectly well while two were as badly off as ever.

From this experience, it would be fair to conclude that in this particular group of cases the results of medical treatment have been fully as satisfactory as, or perhaps even better than the results of surgery. The weakness of the group as a whole, excluding its diminutive size, lies in the fact that the majority have been followed for too short a time. The factor of chronicity and periodicity of symptoms in ulcer cases cannot be over-emphasized. Following their course for a few months or even a few years, and thus judging about end-results of therapy does not mean much. The decision in regard to the form of treatment that is really effective will depend upon which is most efficacious in aiding the greatest number of cases to get along best during their entire lives. Temporarily good results, even for a period of several years, can usually be obtained by almost any systematic regime.

I know of no way for selecting suitable cases for medical or surgical treatment rather than the somewhat haphazard method of trial by error. It appears that even marked pyloric obstruction may be due to spasm rather than to an organic stricture and may disappear under dietetic treatment without operation. The size or position of the ulcer, or the amount of induration and cicatrization found at operation, affords no criterion as to how the cases will get along later. Repeated hemorrhage is not necessarily an indication for exploration. An acute perforation always requires surgical aid. This seems to be the only common ground in the treatment of peptic ulcer on which surgeons and internists see eye-to-eye.

If surgery is to be undertaken, it is well to remember that there is an inevitable operative risk. This should be always minimized by the most careful pre-operative preparation of the cases, especially of those having any degree of pyloric obstruction. McVicar and his colleagues in the Mayo Clinic have drawn attention to the fact that a certain proportion of cases with pyloric obstruction come under observation in a state of marked dehydration and with alkalosis as evidenced by a high plasma carbon dioxide combining power, a low plasma chloride concentration and a high blood nitrogen reading. Such cases make extremely poor operative risks but can be prepared for operation by systematic gastric lavage and through infusions of hypertonic saline solution and glucose. Balfour recently showed in Boston a very striking graphic

chart illustrating the effect on the dilated stomach and blood chemistry of such treatment. He has permitted me to use the chart here.



Blood changes in the toxemia of ulcer action

After six days treatment with 1% salt and 10% glucose

FIGURE 6. Blood Chemical Changes in Pyloric Obstruction. (Balfour)

The continued administration of fluids salt and sugar combined with gastric lavage allows the stomach to contract, reduces alkalosis and brings the blood nitrogen value to a normal level. A case so prepared is a good operative risk, whereas an unprepared case if operated on, is almost certainly doomed to death.

The possible relationship of foci of infection in the teeth or tonsils to peptic ulcer is worth mentioning. It has interested me to discover that in the group of surgical cases with unsuccessful immediate results reported in Figure 6, Case 1 had two dead teeth which were removed in 1924 and since then there has only been one very trivial hemorrhage, Case 2 had a great many bad teeth which were not cleaned up until 1924 since which time there has been only one small hemorrhage and a marked improvement with a weight gain of fifteen pounds, and Case 6 had several bad teeth which he was advised to have removed but about which he never had anything done. I believe that in the East we do not stress enough the possible importance of focal infection in the management of these cases and would do well to study more carefully this phase of the problem.

CONCLUSION

Naturally it would be ridiculous to draw any sweeping conclusions in regard to the treatment of peptic ulcer from so small an experience as is analyzed here. In these cases however there have been encountered most of the common problems which arise in regard to the medical and surgical aspects of this disease. There is something to the argument too, that a small group of cases carefully examined and followed by one observer yields clinical information less easily obtainable from the more impersonal study of a large group.

Certain impressions stand out boldly.

Peptic ulcer is a notably chronic disease tending to spontaneous remissions, so that the immediate results of any form of treatment are not

indicative of the final end-results. Any therapy which does not afford symptomatic relief over many years' time is not effectual.

The mental attitude of ulcer-bearing patients toward their disease and its management plays an important part in their response to any form of treatment. If the patients feel they are going to be helped and have faith and confidence, they immediately become comfortable and begin to improve. Worry, fear, anxiety, irritation, or undue fatigue all exaggerate ulcer symptoms.

Medical management of ulcer can be made elaborate or simple, expensive or cheap, time consuming or time saving. A surprising number of ulcer cases get remarkable relief through very simple therapy when the factors of worry and undue fatigue are eliminated, and when the nature of their illness is explained to them.

Unsuccessful medical therapy can always be given up for surgical treatment.

The surgical treatment of peptic ulcer has an inevitable risk attached to it. A certain number of patients die following even the simplest surgical procedures.

The immediate effect of a successful operation for peptic ulcer is remarkably gratifying. The patients gain weight and strength, lose all consciousness of indigestion and ill health, and rapidly reenter the various fields of work in which vitality is of great importance. If such good results were always obtained, were permanent, and if there were no post-operative complications, the surgical methods of treatment would have more adherents.

The unsuccessful results of surgery are almost complete failures. The bridges are pretty well ruined by an operation. It is a rare patient with a mal-functioning gastro-enterostomy or a gastrotjejunal ulcer who can contemplate with equanimity and hope a second operation. He feels that he has gambled and lost a large stake on his first surgical venture and hates to take another chance.

Focal infection in the shape of diseased teeth or tonsils may play some part in the peptic ulcer

picture. Possible foci of infection should be systematically cared for.

Bearing these impressions in mind, my own conception of the best treatment of peptic ulcer at present available is fairly easy to define. The whole patient, and not only his ulcer, must be treated. He must be given a long period of mental and physical rest, and a simple diet with enough alkali to overcome symptoms. He must plan to lead a well-regulated life for months or even for years. The most important single point in treatment is to establish in the patient's mind a sense of security and tranquility, and to lay out for him a program of rest, exercise, recreation, diet and medication that can be followed to the last letter. Frequent small feedings of easily digested foods appear to be desirable. The use of sunshine, fresh air, recreation, exercise, sleep, and the avoidance of worry are as important in the therapeutic program as is the use of drugs.

Certain exceptional and complicated cases of ulcer need periods of hospitalization. For the majority, it is less irksome, less worrying, and just as beneficial to be treated at home, or away from home in pleasant surroundings, as in the institutional atmosphere of the modern well organized hospital with its factory-like methods.

Should relatively simple methods of medical treatment fail, surgery can be considered. Surgery has the great disadvantage of being a trifle dangerous, and fairly uncertain in its end-results. No patient should be pushed into an operation. Each case should be given a free rein to try other treatments first, having decided that non surgical treatment is a failure and having made up his mind that operation is desirable, he should be prepared for the operation as carefully as is possible, and turned over to a skillful operator.

I take this opportunity of expressing my thanks to Dr. Donald Balfour for his courtesy in sending me his original lantern slide copied in Figure 7, and for allowing me to reproduce it in this paper.

DUODENAL ULCER WITHOUT SYMPTOMS

Report of Four Cases with Positive Roentgenologic Findings

BY MEYER GOLOB, M.D.*

THAT duodenal ulcer may occur without symptoms is an established fact. So many cases have been reported in the literature that the condition can hardly be called rare. Yet many physicians appear unwilling to accept the diagnosis of duodenal ulcer unless the classical symptoms are present. In fact, my inspiration for writing this paper arose from a referring

physician's haughty disapproval of my diagnosis of duodenal ulcer based solely on positive x-ray evidence and the presence of occult blood in the feces, and in the absence of the usual symptoms.

However, if we are to make our diagnoses early enough to benefit our patients in the true sense of preventive medicine, we must not expect to find the classical symptoms always, for in very many diseases the symptoms that we are

*For record and address of author see *This Week's Issue* page 592

accustomed to consider most characteristic may be absent in a certain percentage of cases. Especially is this true of duodenal ulcer.

MANY REPORTS OF SYMPTOMLESS DUODENAL ULCER

The current literature contains many references to symptomless duodenal ulcer. Holmes¹, in 1925, discussing the value of the roentgen ray in the diagnosis of duodenal ulcer, stated that there are many cases in which even direct interrogation with regard to the usual symptoms of the disease fails to give any indication of its existence. A typical history of duodenal ulcer is said to be present in only 50 per cent of proved cases, and some writers have given even smaller figures.

Gray and Held², in 1925, in an extensive treatise on the present status of the x-ray in the diagnosis of gastric and duodenal ulcers, asserted that most of the direct roentgen ray signs of duodenal ulcer persist to a greater or less degree, whether the patient has symptoms or not.

Snider³, in 1925, emphasized the fact that the absence of symptoms of duodenal ulcer is of little value as compared with their presence, that is characteristic symptoms point almost certainly to the existence of duodenal ulcer but their absence by no means excludes this condition. Even when present, the symptoms are subject to great variation, furthermore, in about 25 per cent of undoubted cases, the symptoms are more characteristic of cholecystitis or appendicitis than of duodenal ulcer.

In a symposium on peptic ulcer, Barker⁴, in 1925, expressed a similar view. "In reality," he wrote "no history is constant for peptic or duodenal ulcer, since they may be symptomless."

However Dwyer and Blackford⁵ in 1926, asserted that from their findings in an analysis of 332 cases of organic gastric and duodenal lesions, they believe it is relatively rare for the roentgenologist to demonstrate an ulcer without at least a very suggestive history. In their series a typical history of duodenal ulcer was found in 80 per cent of cases, a suggestive history, in 20 per cent. It is in the suggestive group of cases according to the writers that the x-ray plays the most important rôle, for, without the roentgenologic demonstration of the ulcer, the clinician would be unable to arrive at a definite diagnosis. They further believe that as not all patients with duodenal ulcer give a good clinical history and this disease often simulates lesions of the gall-bladder or appendix the x-ray serves an additional function in differential diagnosis.

Movnihan⁶ speaks of "a small group of cases in which the symptoms of active ulceration are almost completely latent and the patient first consults his medical man because of repeated and copious vomiting which is found to be due to an obstruction near the pylorus." He rather

disparages the use of the variegated medical terminology which includes such misleading terms as 'acid dyspepsia,' hyperacidity and hyperchlorhydria. Not only are they dangerous by concealing the true organic nature of the lesion implying that it is a functional defect but they are also direct misnomers. "Persistent hyperchlorhydria" writes Movnihan, "is the medical term for the surgical condition of duodenal ulcer."

Powers⁷ in 1925 related four cases of perforated symptomless duodenal ulcer. In each instance the patient had apparently been entirely well previous to an injury which caused perforation of the hitherto unsuspected ulcer.

In a series of one hundred operations for gall-bladder disease Bruce⁸ encountered five cases in which duodenal ulcer was also present although this condition was not suspected either from the clinical or roentgen ray examinations.

I have cited but a few of the references to the existence of symptomless duodenal ulcer but they are sufficient to prove the point. A thorough survey of the literature on this subject would be entirely too exhaustive for the purposes of this paper. But, I believe that I have given sufficient data to establish the fact that if we refuse to accept the diagnosis of duodenal ulcer without the typical symptoms we shall necessarily overlook many cases at a time when the prospects from correct treatment are most hopeful.

ROENTGENOLOGIC STUDY REQUIRED

What then are the most reliable symptoms and signs of duodenal ulcer? Can we really rely on the clinical picture to make the diagnosis and on its absence to exclude the diagnosis?

Movnihan while admitting that there are few other diseases whose symptoms appear in such definite and well ordered sequence, makes the following statement "It is true that there are cases of which fuller details must presently be given in which the regular appearance of the symptoms is absent or in which one symptom is so exaggerated as to dwarf, or even to destroy, the value of others."

What shall we say about the patient whom we examine during a period of repose and quiescence and whose symptoms are vague and not directly suggestive of duodenal ulcer? What weight shall we place upon positive roentgenologic findings when clinical evidences are absent or obscure?

Conceding that the most characteristic clinical feature warranting the diagnosis of duodenal ulcer is the periodicity of the symptoms and their recurrence from time to time with complete abeyance in the intervals we cannot admit the converse that the absence of this periodicity and other classical symptoms excludes the diagnosis of duodenal ulcer.

It is my belief that digestive symptoms no

matter how slight, demand a roentgenologic investigation of the gastrointestinal tract, for, if we are to derive the fullest benefits from preventive medicine, an early diagnosis is a *sine qua non*

THREE TYPES OF DUODENAL ULCER

The excessive acidity of the gastric secretion is largely responsible for the clinical symptoms of duodenal ulcer. Severe recurrent hyperchlorhydria usually means duodenal ulcer. Furthermore, high acidity figures are usually associated with the classical symptoms of the disease.

However, in silent cases the hydrochloric acid secretion may be normal or even subnormal, therefore, we cannot exclude the diagnosis of duodenal ulcer because of the absence of hyperchlorhydria. "It is undoubtedly the rule," writes Moynihan, "in intractable cases of so called acid dyspepsia, as I have seen them, for there to be no hyperacidity, and it is in my experience invariably to find duodenal ulcer in such cases."

From my own experience I have learned to divide cases of duodenal ulcer into three groups

(1) *The clinical type*, giving a characteristic symptomatology

(2) *The atypical type*, in which the vague symptoms merely indicate a digestive aberration but positive x-ray findings establish the diagnosis

(3) *The silent type*, in which there are no digestive symptoms whatsoever but the ulcer is discovered accidentally during the course of a roentgenologic examination

Because few patients consulting the gastroenterologist nowadays escape roentgenologic investigation of the alimentary tract, a correct diagnosis may be expected in a large percentage of cases, unless we be so unreasonable as to expect classical symptoms in every case.

Subjective factors may play a large part in influencing the patient's evaluation of his symptoms. Therefore I likewise divide my patients into three groups with regard to the importance to be attached to their complaints

- (1) Those who magnify their complaints
- (2) Those who minimize their complaints
- (3) Those who do not know how to describe their symptoms

Before subjecting the patient to elaborate study, I first employ medical and dietetic test therapy. If pain is a definite symptom, I give alkalies, as instant relief is strongly suggestive of gastric ulcer, if the pain is not relieved until later, duodenal ulcer is more probable.

Dietetic Test: pain occurs earlier if food is liquid, late if food is solid. Where pain is engendered by food intake, a gastric ulcer sequence may be assumed, conversely, pain eased

by food ingestion insinuates a duodenal lesion. Sitophobia without anorexia speaks for pyloric ulcer pathology, a history of frequent eating infers a post-pyloric ulcer lesion.

REPORT OF CASES

CASE 1 A man, aged 22, clerk, complained that he had suffered from nervous irritability and quick tiring for the past three years. The family history was negative. The onset of the symptoms followed a postoperative double recurrent inguinal hernia, from which recovery was uneventful. The patient had had three attacks of precordial pain and had on one occasion been seized with vomiting, when he fainted. The vomitus contained only undigested food residua. Attacks of dizziness with loss of orientation occasioned him much alarm. The only gastric symptoms were postprandial discomfort and belching. The appetite was singularly good.

Physical examination was negative except for poor body nutrition and muscular asthenia. The Wassermann test was negative with all antigens.

In view of the nervous symptoms, I advised the patient to consult a neurologist, whose report read as follows: General neurologic and medical examination is quite negative. He shows, however, a fairly marked neurasthenic syndrome, although I believe we are dealing in his case with a psychoneurosis. There is also a bare suspicion that he has a schizophrenic make-up.

Symptomatic treatment was ineffective. The symptoms persisted with shorter free intervals and stormier attacks. Because of the vague stomach symptoms and the low acidity figures of the gastric contents I resorted to biliary drainage, but after the usual three hours the duodenal tube failed to pass through the pylorus. Fluoroscopy revealed the distal end of the tube curled up at or near the pylorus. The failure of the tube to leave the stomach was undoubtedly due to pylorospasm.

At the patient's request, a complete roentgenologic study of the gastrointestinal tract was made. The principal positive x-ray findings were pylorospasm, persistent bulbar distortion and a six hours residual in both stomach and duodenum.

Under medical treatment for duodenal ulcer there was arrest of the symptoms. A follow-up study showed that the patient remained relieved. This case illustrates an important type of duodenal ulcer without ulcer symptoms.

CASE 2 A girl aged 19, single, complained of weakness. The family and past personal history were negative. Previously in perfect health, she had recently noticed that she tired quickly and her strength was failing.

Except for marked pallor, physical examination was negative. The red blood cell count was 2,475,000, white cell count, 11,000, hemoglobin, 44 per cent., color index 0.89. In other words, there was a secondary anemia of moderate degree.

The total acidity of the gastric contents was 100 free hydrochloric acid, 70.

Combined fluoroscopy and roentgenographic study showed a persistent niche deformity on the lesser curvature of the duodenum with an incisura on the opposite side.

Under combined dietetic and medical treatment in the hospital the patient made an excellent clinical recovery. The most interesting feature of this case is the complete absence of gastric symptoms notwithstanding positive roentgenologic proof of the existence of a duodenal ulcer.

CASE 3 A man aged 52 complained of regurgitation of blood-tinged fluid from his stomach when

ever he lay in the prone position This symptom had begun three years previously

Physical examination was negative Analysis of the gastric contents gave low acidity figures

Roentgenologic study showed a large gastric residue following the ingestion of the opaque meal at six, twenty-four and forty-eight hours The duodenal bulb was not visualized

At operation an obstructive duodenal ulcer was found After a gastro-enterostomy, there was complete disappearance of the symptom of regurgitation

While there was a conspicuous gastric symptom in this case there were no clinical evidences to indicate that the nature of the trouble was a duodenal ulcer

CASE 4 A colored man aged 29, complained of miserv in the stomach of nine years duration. There was no periodicity and the symptom was in no way related to meals This was his sole complaint

The patient was poorly developed and undernourished Otherwise physical examination was negative Analysis of the gastric contents showed low acidity figures

Roentgenologic study revealed an absolutely typical deformity of the duodenal bulb

This case was of the atypical type in which the single symptom merely suggested vaguely the possibility of a gastric disorder

DISCUSSION

There is ample justification for the statement that the symptomatology of duodenal ulcer may be misleading in more ways than one The cases just cited, in addition to the experience of the authors quoted in this communication, prove completely that the absence of characteristic symptoms by no means negatives the diagnosis of duodenal ulcer

There is another source of error Some time ago W J Mayo⁹ pointed out that duodenal ulcers exist in two forms namely, the indurated and calloused ulcer, which can be seen and felt at operation from the peritoneal surface, and the non-indurated, non-calloused ulcer, which cannot be seen or palpated from the outside and can be recognized only with difficulty even when the intestine is opened, since its site is sometimes distinguished only by a slight abrasion of the mucosa

Judd and Nagel¹⁰ have called this second type duodenitis to distinguish it from the calloused ulcer, and they state that its clinical picture is practically identical with that of chronic duodenal ulcer They believe that all chronic ulcers probably originate from preexisting duodenitis

According to Carman¹¹, the roentgenographic deformity in duodenitis is the same as in calloused duodenal ulcer, except that a niche is never seen in duodenitis

We may venture the following three hypothetical factors to explain the absence of symptoms in cases of duodenal ulcer

(1) The patient is not observant The symptoms may be so slight that he pays little attention to them, attributing the vague discomfort

to some dietetic indiscretion Then he may seek medical advice during a quiescent period, when the ulcer is accidentally discovered on roentgenologic examination This type of patient does not complain of the classical ulcer pain

(2) An analysis of the clinically silent, roentgenologically proved cases shows that the symptoms, however vague may be of long duration These ulcers are probably to a large extent healed, hence the classical symptoms are not encountered

(3) The low acidity figures usually associated with symptomless ulcers may be explained by the fact that the ulcer pain is largely due to hyperchlorhydria By introducing hydrochloric acid into the stomach, typical ulcer distress may be caused and this pain disappears promptly when the stomach is evacuated The absence of hyperchlorhydria in cases of symptomless duodenal ulcer probably arises from an autoregulatory mechanism, which brings about neutralization of the acid chyme, thus removing an agent of irritation and accounting for the absence of pain. This is an instance of physiologic adjustment to abnormal conditions

In leading textbooks concerned with duodenal ulcer the classical symptoms are discussed in great detail However, the important truth that neurotic disturbances and vasomotor symptoms may be predominant in cases of duodenal ulcer is insufficiently emphasized

Musser, however, states in reference to duodenal ulcer that "the symptoms are obscure and may be wanting entirely, the patient probably complaining only of intestinal indigestion"

Kelly, discussing both gastric and duodenal ulcer, begins with the more unusual form of the disease as follows "The symptoms are extremely variable In a few cases, there are no symptoms, the ulcer being an accidental finding at the necropsy, rarely a profuse hemorrhage or a perforation is the initial manifestation"

With a more general use of roentgenologic study in all cases with even slight digestive symptoms, there would be fewer necropsies and more biopsies in cases of duodenal ulcer

It is interesting to note that in the older textbooks gastric and duodenal ulcer were treated as one subject, usually under the heading of peptic ulcer Gastric ulcer received more attention Apparently but little attempt was made to differentiate the two conditions, and they were regarded as the same disease with identical symptoms, differing only with regard to the location of the lesion

I have records of twenty eight cases of duodenal ulcer proved roentgenographically In eighteen cases the definite clinical syndrome was present, in six, the symptoms were vaguely suggestive of a duodenal or gastric lesion, in the remaining four, no inference with regard to the digestive apparatus could be drawn from the symptoms

matter how slight, demand a roentgenologic investigation of the gastrointestinal tract, for, if we are to derive the fullest benefits from preventive medicine, an early diagnosis is a *sine qua non*

THREE TYPES OF DUODENAL ULCER

The excessive acidity of the gastric secretion is largely responsible for the clinical symptoms of duodenal ulcer. Severe recurrent hyperchlorhydria usually means duodenal ulcer. Furthermore, high acidity figures are usually associated with the classical symptoms of the disease.

However, in silent cases the hydrochloric acid secretion may be normal or even subnormal, therefore, we cannot exclude the diagnosis of duodenal ulcer because of the absence of hyperchlorhydria. "It is undoubtedly the rule," writes Moynihan, "in intractable cases of so called acid dyspepsia, as I have seen them, for there to be no hyperacidity, and it is in my experience invariable to find duodenal ulcer in such cases."

From my own experience I have learned to divide cases of duodenal ulcer into three groups:

- (1) *The clinical type*, giving a characteristic symptomatology
- (2) *The atypical type*, in which the vague symptoms merely indicate a digestive aberration but positive x-ray findings establish the diagnosis
- (3) *The silent type*, in which there are no digestive symptoms whatsoever but the ulcer is discovered accidentally during the course of a roentgenologic examination

Because few patients consulting the gastroenterologist nowadays escape roentgenologic investigation of the alimentary tract, a correct diagnosis may be expected in a large percentage of cases, unless we be so unreasonable as to expect classical symptoms in every case.

Subjective factors may play a large part in influencing the patient's evaluation of his symptoms. Therefore I likewise divide my patients into three groups with regard to the importance to be attached to their complaints:

- (1) Those who magnify their complaints
- (2) Those who minimize their complaints
- (3) Those who do not know how to describe their symptoms

Before subjecting the patient to elaborate study, I first employ medical and dietetic test therapy. If pain is a definite symptom, I give alkalis, as instant relief is strongly suggestive of gastric ulcer, if the pain is not relieved until later, duodenal ulcer is more probable.

Dietetic Test pain occurs earlier if food is liquid, late if food is solid. Where pain is engendered by food intake, a gastric ulcer sequence may be assumed, conversely, pain eased

by food ingestion insinuates a duodenal lesion. Sitophobia without anorexia speaks for pyloric ulcer pathology, a history of frequent eating infers a post-pyloric ulcer lesion.

REPORT OF CASES

CASE 1 A man, aged 22, clerk, complained that he had suffered from nervous irritability and quick tiring for the past three years. The family history was negative. The onset of the symptoms followed a postoperative double recurrent inguinal hernia, from which recovery was uneventful. The patient had had three attacks of precordial pain and had on one occasion been seized with vomiting, when he fainted. The vomitus contained only undigested food residue. Attacks of dizziness with loss of orientation occasioned him much alarm. The only gastric symptoms were postprandial discomfort and belching. The appetite was singularly good.

Physical examination was negative, except for poor body nutrition and muscular asthenia. The Wassermann test was negative with all antigens.

In view of the nervous symptoms, I advised the patient to consult a neurologist, whose report read as follows: General neurologic and medical examination is quite negative. He shows, however, a fairly marked neurasthenic syndrome although I believe we are dealing in his case with a psychoneurosis. There is also a bare suspicion that he has a schizophrenic make up.

Symptomatic treatment was ineffective. The symptoms persisted with shorter free intervals and stormier attacks. Because of the vague stomach symptoms and the low acidity figures of the gastric contents I resorted to biliary drainage but after the usual three hours the duodenal tube failed to pass through the pylorus. Fluoroscopy revealed the distal end of the tube curled up at or near the pylorus. The failure of the tube to leave the stomach was undoubtedly due to pylorospasm.

At the patient's request, a complete roentgenologic study of the gastrointestinal tract was made. The principal positive x-ray findings were pylorospasm, persistent bulbar distortion and a six hours' rest due in both stomach and duodenum.

Under medical treatment for duodenal ulcer there was arrest of the symptoms. A follow-up study showed that the patient remained relieved. This case illustrates an important type of duodenal ulcer without ulcer symptoms.

CASE 2 A girl aged 19, single, complained of weakness. The family and past personal history were negative. Previously in perfect health she had recently noticed that she tired quickly and her strength was failing.

Except for marked pallor physical examination was negative. The red blood cell count was 2,475,000; white cell count, 11,000; hemoglobin 44 per cent; color index 0.89. In other words, there was a secondary anemia of moderate degree.

The total acidity of the gastric contents was 100, free hydrochloric acid, 70.

Combined fluoroscopy and roentgenographic study showed a persistent niche deformity on the lesser curvature of the duodenum with an incisura on the opposite side.

Under combined dietetic and medical treatment in the hospital the patient made an excellent clinical recovery. The most interesting feature of this case is the complete absence of gastric symptoms notwithstanding positive roentgenologic proof of the existence of a duodenal ulcer.

CASE 3 A man aged 52 complained of regurgitation of blood-tinged fluid from his stomach when

ostomy and excision of the pylorus, the latter sixteen months after simple posterior gastro-enterostomy. It is felt that they are important enough to warrant report.

B L N M 26532, a 36-year-old Polish shoe salesman was first seen in the Out Door Department of the Peter Bent Brigham Hospital November 28, 1921 complaining of stomach trouble. His family history and past history were not important. He had always eaten at irregular hours and for the last six months had suffered from gas, sour eructations and epigastric pain cramping in nature which came on at varying intervals after meals and often wakened him at night, and from which he was able to secure relief by baking soda or by inducing emesis. X-ray examination of his gastro-intestinal tract on December 1, 1921, showed a duodenal ulcer and a questionable gastric ulcer on the lesser curvature near the pylorus. Physical examination was negative. He was sent into the surgical ward for treatment. A gastric analysis, one hour after a test meal of 60 grams white bread and 200 cc of water, showed 100 points of free HCl and a total acidity of 115. Aspiration at a time when he complained of his characteristic distress showed 92 points of free acid and 104 total. Blood examination showed 99% hemoglobin, 4,672,000 red blood cells, 12,800 white blood cells and a normal appearing smear. Urine was negative. Stools showed no occult blood. The Wassermann reaction on the blood serum was negative. A two-stage operation was performed, a gastro-jejuno-stomy being done first followed by excision of the pylorus ten days later. An ulcer was found just beyond the pylorus surrounded by diffuse inflammation and adherent to the head of the pancreas. The post-operative course was marred by a pulmonary infarct, but he was discharged improved on January 16, 1922.

He returned to the medical ward January 12, 1923, saying that after six months complete relief he again suffered from cramping pain. Now however it was low in the abdomen, was not relieved by soda and came on at no definite time in relation to meals. X-ray showed that the gastro-jejuno-stomy was functioning well. The question of a jejunal ulcer was raised because the portion of the jejunal loop nearest the stoma was rather constantly narrowed and somewhat irregular, but there was no definite tenderness on palpation. Clinical pathology showed the blood, urine and stools again normal. He was given five small meals of bland food followed by alkaline powders. Under this regime he improved and was discharged February 3, 1923, to continue treatment at home.

September 24, 1925, he entered the hospital for the third time. He had been relieved by the above treatment as long as he adhered to it, but his symptoms promptly reappeared whenever he stopped it. This led him to submit to an operation in a near-by hospital in October. A jejunal ulcer was found and excised. His symptoms returned in one month and had remained ever since. He had become quite weak and was frequently confined to bed for three or five days at a time. Three months ago he had had a sore throat, with severe pain in all his joints. Physical examination at this time showed a soft systolic murmur at the apex of the heart and a late diastolic murmur in the same area. The blood showed a marked secondary anemia—30% hemoglobin, 3,360,000 red blood cells, 8,800 white blood cells. Four urine examinations were negative. The blood Wassermann reaction was again negative. Stools showed no occult blood by the benzidine test. Gastric aspiration at a time when he complained of pain in the stomach showed 12 points of free acid, but the test was unsatisfactory in that the patient removed the tube before its completion. Intravenous

cholecystograms were reported negative as well as stereoscopic films of the chest. Dental films showed absorption around one molar tooth. A gastro-intestinal series showed the gastro-jejuno-stomy again functioning well and a questionable jejunal ulcer. At this time his pain was quite atypical for ulcer, occurring almost continuously and failing to respond for more than a few minutes to therapeutic administrations of food and alkali. A Sippy diet failed entirely to give relief. At first this was thought to be due to the patient's marked nervous condition. Later it was noticed that his pain was dependent on the activity of the colon, a fact which the patient brought to our attention. By decreasing the activity of the colon through suitable measures the patient was markedly relieved and was discharged on October 16, 1925, on a five meal diet and bismuth subcarbonate.

He was afterward frequently seen in the gastro-intestinal clinic of the Out Door Department. For six months he was much improved. In May, 1926, his articular pain returned and he felt very weak. His anemia which had decreased in the hospital, now became worse, the red blood cell count falling to 2,630,000. He was given iron in the form of Blaud's pills and on November 9, 1926, was advised to eat liver in the quantities used in the dietary treatment of pernicious anemia. Intermittently during this period he suffered from gnawing epigastric distress. He was last seen on November 7, 1926, and advised to enter a hospital for rest and proper liver diet which he was unable to get at home.

This he did and was lost sight of until he came under the care of a surgeon in another hospital in April, 1927. At this time a gastro-colic fistula was suspected and operation was performed. A gastro-jejunal ulcer with a surrounding inflammatory mass the size of a lime was found, the ulcer being directly at the anastomosis on the posterior wall. There was also a jejuno-colic fistula between the proximal loop of the jejunum and the posterior wall of the transverse colon, evidently from perforations of an old jejunal ulcer. Four inches of the jejunum were resected including the fistulous tract, the gastro-enteric anastomosis, the gastro-jejunal ulcer and the jejunum. One-half to two-thirds of the stomach was removed and a new gastro-jejuno-stomy made with end to end anastomosis of the jejunum. He was transfused after the operation but did not rally and died.

CASE 2 J J M M28755, a 33-year-old Canadian laborer entered the medical wards of the Peter Bent Brigham Hospital on October 15, 1926, complaining of weakness and tarry stools. His family and past history were irrelevant. His present illness had begun 13 years before when without previous gastric distress he suddenly vomited what he estimated to be a quart of blood. For this he was treated with a milk diet for a year. During this time he had occasional attacks of epigastric pain coming on about two hours after meals, dull and non-radiating from which relief was secured by vomiting or by eating. In 1916 while in Canada he was operated on for peptic ulcer. After a year's relief the same symptoms returned.

During the next nine years he had no remission longer than two months and on six occasions he vomited blood. After the last hematemesis, in August, 1925, he came into the surgical ward of the Peter Bent Brigham Hospital. At operation an ulcer 2 cm. in diameter was found on the gastric side of the pylorus. There were numerous adhesions in this region presumably resulting from his previous operation. A posterior gastro-enterostomy was done and the patient was discharged improved after 17 days.

He reported at monthly intervals to the gastro-intestinal clinic in the Out Door Department where he was advised to take five small meals daily fol-

The chief complaints in the six cases with vaguely suggestive symptoms were pyrosis, the bicarbonate of soda habit and postprandial discomfort. The constancy of the symptoms without intervals of abatement was a striking feature.

CONCLUSIONS

- 1 Symptomless duodenal ulcer is an entity
- 2 Clinically, we may divide duodenal ulcers into three main types (a) *the clinical type*, giving a characteristic symptomatology, (b) *the atypical type*, in which the vague symptoms merely indicate a digestive aberration but positive x-ray findings establish the diagnosis, and (c) *the silent type*, in which there are no digestive symptoms whatsoever but the ulcer is discovered accidentally during the course of a roentgenologic examination
- 3 Because some patients magnify their complaints, others minimize them, and still others fail to describe their symptoms accurately, we are placed at a great disadvantage with regard to the clinical evaluation of the symptoms of duodenal ulcer
- 4 Only by the more extended use of roentgenologic study even in cases with merely vague digestive symptoms can we hope to avoid overlooking a considerable number of cases of silent duodenal ulcer

5 Normal or subnormal gastric acidity figures are commonly associated with silent duodenal ulcers. The reason is that the pain of gastric and duodenal ulcers arises, as has been shown experimentally, from the irritation caused by the highly acid gastric juice.

6 A condition of duodenitis may give the symptoms of duodenal ulcer but without the positive x-ray findings.

7 Four cases of silent duodenal ulcer, proved roentgenographically, are reported.

REFERENCES

- 1 Holmes, L. P. & Ray in *Diagnosis of Duodenal Ulcer* J M A Georgia 14 368 1926
- 2 Gray, T. and Held, I. W. *Present Status of X-Ray Diagnosis of Gastric and Duodenal Ulcer* M Clin & Amer 9 755 1925
- 3 Snyder, F. L. *A Study of Duodenal Ulcer with Special Reference to Diagnosis and Treatment* J Michigan M Soc 24 419 1925
- 4 Barker, L. F. *Peptic Ulcer From Internist's Standpoint* J A M A 86 1382 1925
- 5 Dwyer, M. F. and Blackford, J. M. *Clinical and Roentgenological Findings in 332 Organic Gastric Lesions* Northwest Med 25 596 1926
- 6 Moynihan, B. G. *Duodenal Ulcer* Philadelphia W. B. Saunders Co. 1910
- 7 Powers, H. W. *Perforation of Silent Ulcer of Duodenum From External Trauma* Surg Gynec Obst 60 84 1926
- 8 Bruce, H. A. *Association of Cholecystitis with Duodenal Ulcer* Ann Surg 84 387 1926
- 9 Mayo, W. J. Cited by Judd, E. S. and Nagel, G. W. in *Ann Surg*
- 10 Judd, E. S. and Nagel, G. W. *Duodenitis* Ann Surg 85 380 1927
- 11 Carman, R. D. Cited by Judd, E. S. and Nagel, G. W.

GASTROCOLIC FISTULA AS A RESULT OF PEPTIC ULCER

Report of Two Cases*

BY ROBERT T. MONROE, M.D., AND EDWARD S. EMERY, JR., M.D.†

ONE of the rare complications of peptic ulcer is a fistulous communication between the stomach and the colon. It may occur as a result of the perforation of a gastric ulcer through the wall of the transverse colon, to which it has become adherent through inflammation, or it may arise indirectly by perforation of the jejunum, forming first a gastro-jejunal fistula, followed by a jejunal ulcer, which finally perforates the colon,—a gastro-jejuno-colic fistula. These events may take place spontaneously, as part of the life cycle of a peptic ulcer; there are numerous references to such cases, especially in the older literature¹. The number of cases has increased, however, since surgical measures have been employed in the treatment of ulcer.

Mayo and Rankin² have been influential in attracting attention to this condition. In their review of the Mayo Clinic cases they found that jejunal ulcer occurred in 1%-3% of all ulcer cases upon which gastro-enterostomy had been performed. Of these, 10% ultimately developed

gastro-colic fistulas. Bolton and Trotter³ collected 31 postoperative cases, all in males, and gave a good description of the symptoms: diarrhoea, with undigested food in the stools, fecal vomiting, belching of foul gas, pain and wasting. Of these cases 27 were operated upon and 21 recovered. The four not operated upon died, one of perforation, one of hemorrhage, and two of inanition. Burnham⁴, in 1919, described the X-ray appearance of gastro-colic fistula. Braws and Meyer⁵ assert that the type of operation which is followed by a fistula is not important, since it occurs after gastro-enterostomy with or without resection of the pylorus. The symptoms of fistula develop usually within a year after operation, but may come within a few weeks or as late as nine years. Usually there are symptoms of a jejunal ulcer for some time before the symptoms of the fistula are noted.

In the past few months, two of the patients with ulcer whom we have seen for several years both in the wards and in the Out Door Department of this hospital, were found ultimately to have a gastro-colic fistula. Both were males, one 36 years old, the other 33. The former developed his fistula six years after gastro-jejuno-

*From the Medical Clinic of the Peter Bent Brigham Hospital, Boston, Massachusetts.

†For records and addresses of authors see *This Week's Issue* page 59.

ostomy and excision of the pylorus, the latter sixteen months after simple posterior gastro-enterostomy. It is felt that they are important enough to warrant report.

B L N, M 26532, a 36 year old Polish shoe salesman was first seen in the Out Door Department of the Peter Bent Brigham Hospital November 28 1921, complaining of stomach trouble. His family history and past history were not important. He had always eaten at irregular hours and for the last six months had suffered from gas, sour eructations and epigastric pain cramping in nature which came on at varying intervals after meals and often wakened him at night and from which he was able to secure relief by baking soda or by inducing emesis. X-ray examination of his gastrointestinal tract on December 1, 1921 showed a duodenal ulcer and a questionable gastric ulcer on the lesser curvature near the pylorus. Physical examination was negative. He was sent into the surgical ward for treatment. A gastric analysis one hour after a test meal of 60 grams white bread and 200 cc of water showed 100 points of free HCl and a total acidity of 115. Aspiration at a time when he complained of his characteristic distress showed 92 points of free acid and 104 total. Blood examination showed 99% hemoglobin, 4,672,000 red blood cells, 12,800 white blood cells and a normal appearing smear. Urine was negative. Stools showed no occult blood. The Wassermann reaction on the blood serum was negative. A two-stage operation was performed, a gastro-jejunostomy being done first followed by excision of the pylorus ten days later. An ulcer was found just beyond the pylorus surrounded by diffuse inflammation and adherent to the head of the pancreas. The post-operative course was marred by a pulmonary infarct, but he was discharged improved on January 16 1922.

He returned to the medical ward January 12 1923 saying that after six months complete relief he again suffered from cramping pain. Now however it was low in the abdomen, was not relieved by soda and came on at no definite time in relation to meals. X-ray showed that the gastro-jejunostomy was functioning well. The question of a jejunal ulcer was raised because the portion of the jejunal loop nearest the stoma was rather constantly narrowed and somewhat irregular but there was no definite tenderness on palpation. Clinical pathology showed the blood, urine and stools again normal. He was given five small meals of bland food followed by alkaline powders. Under this regime he improved and was discharged February 3 1923 to continue treatment at home.

September 24 1925 he entered the hospital for the third time. He had been relieved by the above treatment as long as he adhered to it, but his symptoms promptly reappeared whenever he stopped it. This led him to submit to an operation in a nearby hospital in October. A jejunal ulcer was found and excised. His symptoms returned in one month and had remained ever since. He had become quite weak and was frequently confined to bed for three or five days at a time. Three months ago he had had a sore throat, with severe pain in all his joints. Physical examination at this time showed a soft systolic murmur at the apex of the heart and a late diastolic murmur in the same area. The blood showed a marked secondary anemia—30% hemoglobin, 3,360,000 red blood cells, 8,800 white blood cells. Four urine examinations were negative. The blood Wassermann reaction was again negative. Stools showed no occult blood by the benzidine test. Gastric aspiration at a time when he complained of pain in the stomach showed 12 points of free acid but the test was unsatisfactory in that the patient removed the tube before its completion. Intravenous

cholecystograms were reported negative, as well as stereoscopic films of the chest. Dental films showed absorption around one molar tooth. A gastro-intestinal series showed the gastro-jejunostomy again functioning well and a questionable jejunal ulcer. At this time his pain was quite atypical for ulcer occurring almost continuously and failing to respond for more than a few minutes to therapeutic administrations of food and alkali. A Sippy diet failed entirely to give relief. At first this was thought to be due to the patient's marked nervous condition. Later it was noticed that his pain was dependent on the activity of the colon, a fact which the patient brought to our attention. By decreasing the activity of the colon through suitable measures the patient was markedly relieved and was discharged on October 16 1925 on a five meal diet and bismuth subcarbonate.

He was afterward frequently seen in the gastro-intestinal clinic of the Out Door Department. For six months he was much improved. In May, 1926, his arthritic pain returned and he felt very weak. His anemia which had decreased in the hospital, now became worse, the red blood cell count falling to 2,630,000. He was given iron in the form of Blaud's pills and on November 9 1926 was advised to eat liver in the quantities used in the dietary treatment of pernicious anemia. Intermittently during this period he suffered from gnawing epigastric distress. He was last seen on November 7 1926 and advised to enter a hospital for rest and proper liver diet which he was unable to get at home.

This he did and was lost sight of until he came under the care of a surgeon in another hospital in April 1927. At this time a gastro-colic fistula was suspected and operation was performed. A gastro-jejunal ulcer with a surrounding inflammatory mass the size of a lime was found the ulcer being directly at the anastomosis on the posterior wall. There was also a jejuno-colic fistula between the proximal loop of the jejunum and the posterior wall of the transverse colon evidently from perforations of an old jejunal ulcer. Four inches of the jejunum were resected including the fistulous tract the gastro-enteric anastomosis, the gastro-jejunal ulcer and the jejunum. One-half to two-thirds of the stomach was removed and a new gastro-jejunostomy made with end to end anastomosis of the jejunum. He was transfused after the operation but did not rally and died.

CASE 2 J J M M28755 a 33 year-old Canadian laborer entered the medical wards of the Peter Bent Brigham Hospital on October 15 1926 complaining of weakness and tarry stools. His family and past history were irrelevant. His present illness had begun 13 years before when without previous gastric distress he suddenly vomited what he estimated to be a quart of blood. For this he was treated with a milk diet for a year. During this time he had occasional attacks of epigastric pain coming on about two hours after meals dull and non-radiating from which relief was secured by vomiting or by eating. In 1916 while in Canada he was operated on for peptic ulcer. After a year's relief the same symptoms returned.

During the next nine years he had no remission longer than two months and on six occasions he vomited blood. After the last hematemesis in August 1925 he came into the surgical ward of the Peter Bent Brigham Hospital. At operation an ulcer 2 cm in diameter was found on the gastric side of the pylorus. There were numerous adhesions in this region presumably resulting from his previous operation. A posterior gastro-enterostomy was done and the patient was discharged improved after 17 days.

He reported at monthly intervals to the gastro-intestinal clinic in the Out Door Department where he was advised to take five small meals daily fol

The chief complaints in the six cases with vaguely suggestive symptoms were pyrosis, the bicarbonate of soda habit and postprandial discomfort. The constancy of the symptoms without intervals of abeyance was a striking feature.

CONCLUSIONS

1 Symptomless duodenal ulcer is an entity.

2 Clinically, we may divide duodenal ulcers into three main types: (a) *the clinical type*, giving a characteristic symptomatology, (b) *the atypical type*, in which the vague symptoms merely indicate a digestive aberration but positive x-ray findings establish the diagnosis, and (c) *the silent type*, in which there are no digestive symptoms whatsoever but the ulcer is discovered accidentally during the course of a roentgenologic examination.

3 Because some patients magnify their complaints, others minimize them, and still others fail to describe their symptoms accurately, we are placed at a great disadvantage with regard to the clinical evaluation of the symptoms of duodenal ulcer.

4 Only by the more extended use of roentgenologic study even in cases with merely vague digestive symptoms can we hope to avoid overlooking a considerable number of cases of silent duodenal ulcer.

5 Normal or subnormal gastric acidity figures are commonly associated with silent duodenal ulcers. The reason is that the pain of gastric and duodenal ulcers arises as has been shown experimentally, from the irritation caused by the highly acid gastric juice.

6 A condition of duodenitis may give the symptoms of duodenal ulcer but without the positive x-ray findings.

7 Four cases of silent duodenal ulcer, proved roentgenographically, are reported.

REFERENCES

- 1 Holmes L. P. X Ray in Diagnosis of Duodenal Ulcer J. M. A. Georgia 14 368 1925
- 2 Gray T. and Held I. W. Present Status of X Ray Diagnosis of Gastric and Duodenal Ulcer M. Clin. N. Amer. 9 755 1925
- 3 Snyder F. L. A Study of Duodenal Ulcer with Special Reference to Diagnosis and Treatment J. Michigan M. Soc. 24 419 1925
- 4 Barker L. F. Peptic Ulcer From Internist's Standpoint J. A. M. A. 85 1382 1925
- 5 Dwyer M. F. and Blackford J. M. Clinical and Roentgenological Findings in 332 Organic Gastric Lesions Northwest Med. 25 595 1926
- 6 Moynihan B. C. Duodenal Ulcer Philadelphia W. B. Saunders Co. 1910
- 7 Powers H. W. Perforation of Silent Ulcer of Duodenum From External Trauma Surg. Gynec. Obst. 60 84 1935
- 8 Bruce H. A. Association of Cholecystitis with Duodenal Ulcer Ann. Surg. 84 387 1926
- 9 Mayo W. J. Cited by Judd E. S. and Nagel G. W. in Ann. Surg.
- 10 Judd E. S. and Nagel G. W. Duodenitis Ann. Surg. 85 380 1927
- 11 Carman R. D. Cited by Judd E. S. and Nagel G. W.

GASTROCOLIC FISTULA AS A RESULT OF PEPTIC ULCER

Report of Two Cases*

BY ROBERT T. MONROE, M.D., AND EDWARD S. EMERY, JR., M.D.†

ONE of the rare complications of peptic ulcer is a fistulous communication between the stomach and the colon. It may occur as a result of the perforation of a gastric ulcer through the wall of the transverse colon, to which it has become adherent through inflammation, or it may arise indirectly by perforation of the jejunum, forming first a gastro-jejunal fistula, followed by a jejunal ulcer, which finally perforates the colon,—a gastro-jejuno-colic fistula. These events may take place spontaneously, as part of the life cycle of a peptic ulcer, there are numerous references to such cases, especially in the older literature.¹ The number of cases has increased, however, since surgical measures have been employed in the treatment of ulcer.

Mayo and Rankin² have been influential in attracting attention to this condition. In their review of the Mayo Clinic cases they found that jejunal ulcer occurred in 1%-3% of all ulcer cases upon which gastro-enterostomy had been performed. Of these, 10% ultimately developed

gastro-colic fistulas. Bolton and Trotter³ collected 31 postoperative cases, all in males, and gave a good description of the symptoms: diarrhoea, with undigested food in the stools, fecal vomiting, belching of foul gas, pain and wasting. Of these cases 27 were operated upon and 21 recovered. The four not operated upon died, one of perforation, one of hemorrhage, and two of inanition. Burnham⁴, in 1919, described the X-ray appearance of gastro-colic fistula. Bruns and Meyer⁵ assert that the type of operation which is followed by a fistula is not important, since it occurs after gastro-enterostomy with or without resection of the pylorus. The symptoms of fistula develop usually within a year after operation, but may come within a few weeks or as late as nine years. Usually there are symptoms of a jejunal ulcer for some time before the symptoms of the fistula are noted.

In the past few months, two of the patients with ulcer whom we have seen for several years both in the wards and in the Out-Door Department of this hospital, were found ultimately to have a gastro-colic fistula. Both were males, one 36 years old, the other 33. The former developed his fistula six years after gastro-jejuno-

*From the Medical Clinic of the Peter Bent Brigham Hospital, Boston, Massachusetts.

†For records and addresses of authors see This Week's Issue, page 592.

lowing a gastro-enterostomy In neither case were the symptoms believed to be pathognomonic of this condition However, there were symptoms which should have made one suspect the possibility of the development of a fistula These were the lack of typical relief with food and alkalies, the relation of the pain to activity of the colon and the failure of the patient's general condition to improve with relief of symptoms. It is suggested that the operation of choice for a gastro-jejunal ulcer is a subtotal resection

BIBLIOGRAPHY

- 1 Monroe R T Fistula as a result of peptic ulcer with report of a case of gastro-duodenal fistula and a summary of the literature *Am J Med Sci* 174 599 (Nov) 1927
- 2 Rankin F W and Mayo C H Gastrojejunocolic fistula following gastroenterostomy *Surg Clin N Am* 1 1241 1911
- 3 Bolton C and Trotter W Jejuno-colic fistula following gastrojejunostomy *Brit M J* 1910 1 757
- 4 Burnham M P A ray diagnosis of gastrocolic fistula *Am J of Roentgen Ray* 1917 4 173
- 5 Bruns W C and Meyer K A Diagnosis and Treatment of Gastrojejunocolic Fistula *Surg Gyn and Obst.* 1924 38 64

STANDARDS IN INDUSTRIAL DERMATOLOGY[†]

BY C CLY LANE M D †

IN any excursion over uncertain terrain, guideposts are essential for complete assurance that one is on the right track, while in familiar territory and in broad daylight these standards of guidance may receive but scant attention In dermatology, in the broad daylight of clear-cut cases of skin disturbances due to occupation, the close attention to a detailed charted plan is not so absolutely necessary in order to diagnose them, classify them, and treat them properly In the suspected cases, the borderline cases, on the other hand a careful comprehensive plan is indispensable for their satisfactory disposition

that the atrophy and keratoses (Fig 2) on the hands of a physician engaged in x-ray work are due to occupation Similarly, on the other side of the question it may be unquestionable that the lesions of erythema multiforme on the hands of a grocery clerk who comes in with regard to compensation are not industrial or that the lesions of scabies in a mill worker are not due to his work But when it comes to making a decision about the large group of uncertain cases suspected of being industrial, cases without textbook histories or manifestations, a more careful routine is necessary in order to judge properly whether the



FIGURE 1
(Acute Dermatitis in a Blue Print Worker)

For example it may be easy to say that an acute dermatitis (Fig 1) occurring in a blue-print worker, a young man sixteen years old, two weeks after beginning his work, is occupational in origin It may be a simple matter to state

individual is entitled to compensation, hospital expense and physicians' fees with due justice to his employer The value of having rather definite criteria in the study of these indefinite cases has frequently been impressed on me

There can be no question about the value of having certain standards so far as the history and examination are concerned But it is also important to have definite guides to aid in the

Read at the meeting of the Third Clinical Congress of the Connecticut State Medical Society held at New Haven September 20 1927

†For record and address of author see "This Week's Issue" page 592

lowed by alkaline powders. He went back to work and remained symptom free until October 15, 1926, when he passed several tarry stools, became quite weak, and re-entered the medical ward.

Physical examination showed a thin, sallow man, with no demonstrable pathology in heart or lungs. The blood pressure was 95 systolic, 55 diastolic. Blood smears showed moderate achromia, hemo-globin 70%, red blood cells 3,130,000, white blood cells 7,750, the urine was negative. The stools showed a three plus benzidine test. Gastric analysis showed 40 points of free HCL and 50 points of total acidity. X-ray of the gastrointestinal tract showed the gastro-enterostomy functioning well. "There was no tenderness over the stoma, but the jejunum looked narrower than usual." He was started upon the routine Sippy treatment for ulcer and discharged November 10, 1926, without symptoms.

January 1927, he reported that he had passed a large amount of red blood in his stools, and black blood "for two weeks after." Abdominal examination revealed a mass 6 to 8 cm in diameter in the upper right quadrant, which was rather fixed and tender. A barium enema examination was then requested and this was reported as follows:—"The opaque enema filled the large bowel as far as the splenic flexure which was apparently an unusually large coil of intestine. The rest of the bowel filled well. Films showed this apparent large coil to be stomach, which probably indicates a gastro-colic fistula. A film after evacuation shows the large bowel well emptied, but barium in the stomach and small intestine persists."

Close questioning of the patient brought out the fact that, although he had adhered strictly to the Sippy regime and had frequently tested his gastric contents for the presence of free acid, which was always absent, he still had dull pain about three hours after meals, worse in the epigastrium. This was relieved by aspirating the stomach or by alkali but not by food, but after the pain was relieved local soreness persisted. He had none of the classical symptoms of gastric colic fistula, such as fecal vomiting and diarrhoea with undigested food in the stools. Operation was advised, and a mass of adhesions discovered, uniting the small intestines, transverse colon, and stomach. The gastro-jejuno-colic fistula was found, and the gastro-enteric anastomosis was resected, with a portion of the stomach and jejunum. The colon was repaired an end to end anastomosis of the jejunum, and an anterior gastro-enterostomy done. The patient died three days later of pulmonary infarct. Request for autopsy was denied.

Both of these cases have several points of interest. In neither was the diagnosis suspected until the X-ray revealed the communication between the stomach and colon. There is no way of knowing exactly when the communication became established and how long the condition existed before being recognized, except that it probably occurred some time between September 1925 and March 1927, in case 1, and October 1926 and January 1927 in case 2. In other words no new or characteristic symptom developed from which to date the actual occurrence of the perforation. It is of interest that a fistulous tract can occur between the stomach and colon without a resulting diarrhoea or fecal vomiting, symptoms usually considered diagnostic of such a condition.

In spite of this fact a review of the symptoms reveals certain factors which should have

made us suspicious. The distress did not respond in a characteristic manner to therapeutic methods, and was not dependent on the acidity of the gastric contents. This would fit in with a gastro-jejunal ulcer, which was diagnosed in both instances. The outstanding feature of the symptoms was their relation to the condition of the colon. This was most striking in case 1, and it was the patient who first called it to our attention. All measures directed toward the stomach failed to give relief. As soon as the large intestine was quieted, the symptoms subsided. The symptoms were such as to suggest that the colon had become intimately connected with the ulcer and should have kept us on the lookout for further trouble.

The third outstanding feature was that the patients looked and felt worse than one would expect from a simple gastro-jejunal ulcer. In other words, the patients did not seem to be doing well, although their gastro-intestinal tract apparently was getting along satisfactorily.

In retrospect it is possible to trace the sequence of events from the beginning gastro-jejunal ulcer through the stages of adhesions, and infected area to the ultimate development of an opening into the colon, which necessitated an operation. We wish now that we had advocated operation earlier. We held back because we hated to subject these patients to another operation, which would have meant a fourth for one and a third for the other, and we were hoping that we would be able to relieve them by thorough medical measures.

This brings up the question of how to treat other cases in the future. It has been the writers' experience that simple excision of a gastro-jejunal ulcer is likely to be followed by a recurrence. Once a gastro-jejunal ulcer has developed, it is worth while trying to relieve the symptoms by medical measures. This is usually a difficult undertaking, as this type of ulcer responds less well to medical treatment than the usual gastric or duodenal ulcer. Operation is indicated by the occurrence of any of the following conditions: (1) failure to relieve the symptoms of a gastro-jejunal ulcer, (2) failure to improve the general condition of the patient whether or not his gastric symptoms are relieved, (3) the development of any symptoms which may be interpreted as the result of adhesions between the stomach and other viscera.

If operation is decided on for any of these reasons, it is wise to do a subtotal resection. The higher mortality associated with this operation is offset by the greater number of cures and the fewer repeat operations, in each of which one encounters an increase of adhesions and added difficulties.

SUMMARY AND CONCLUSIONS

Two cases are reported with gastro-colic fistulas resulting from a gastro-jejunal ulcer, fol-

clude a detailed account of the process at which the patient works and the substances which he handles. The details of the cleansing process used at the end of a working period are also essential, for the use of gasoline, naphtha, "flash," or some other quick cleaning agent may be at least a partial answer to the problem. Far too often the employees do not know the composition of the substances used and in such cases an examination of the working place or communication with the foreman or factory superintendent may be necessary. The writer uses the following outline

WORK

- Previous occupations
- How long with present firm
- Duration present job
- Details of process
- Details of substances handled
- Details of cleansing process—home—factory
- Any changes in process—in substances—in cleansing
- Any other individual affected
- Any work outside regular employment

Another important factor in the erection of our standards is an early and thorough examination of the individual's skin. Too often such patients are referred for an opinion or come for examination months after the original condition, and the manifestations have been altered by the patient's own treatment or other treatment, or by the mere passage of time. In making such an examination of the skin one must keep an eye open not only for manifestations consistent with industrial exposure, but also for evidences of non-industrial dermatoses such as psoriasis, lupus erythematosus, etc., as well as for the possible self-inflicted diseased processes although these latter are rather unusual. This examination, made early before much alteration has taken place, will enable a proper record to be made for correlation with the facts obtained in the history and thus aid greatly in the proper

disposition of the case. I suggest the following outline as adapted for this purpose

EXAMINATION

- General skin: Blond, brunette, moist, dry, oily, thin, hairy
- Eruption: Distribution, types, etc.
- Mucous membranes: glands, tongue, teeth, etc.
- Evidence of chemicals—of treatment
- Evidences of contagious diseases—syphilis, etc.
- Blood exam: Count, smear, Wass.

Now that the physician is in possession of the facts obtained from the history and from examination, what criteria may be adopted by which this data may be judged? This group of cases has no definite earmarks as a whole, though an occasional case may show stigmata of the occupation, as for example, certain calluses which will indicate definitely the type of work. There are, however, several factors which merit greater consideration and deserve to be weighed very carefully in an attempt to classify properly each individual case.

In the first place, the conclusive evidence given by the amelioration of the condition upon freedom from contact, and the evidence of repeated attacks upon exposure to conditions similar to those existing at the time of previous attacks (See Figure 3)

Secondly, the fact that the lesions found are consistent with the history of exposure to the substances claimed and at the time claimed. For example, I recall the case of the young man who had a keloid of the arm following a gasoline burn (See Fig 4)

It had been a rather rapid growth and there was some question as to whether the keloid antedated the burn or actually followed it as claimed.

Third, the fact that the individual is exposed to a substance or substances known to produce skin changes frequently. The most frequent occupations affected are

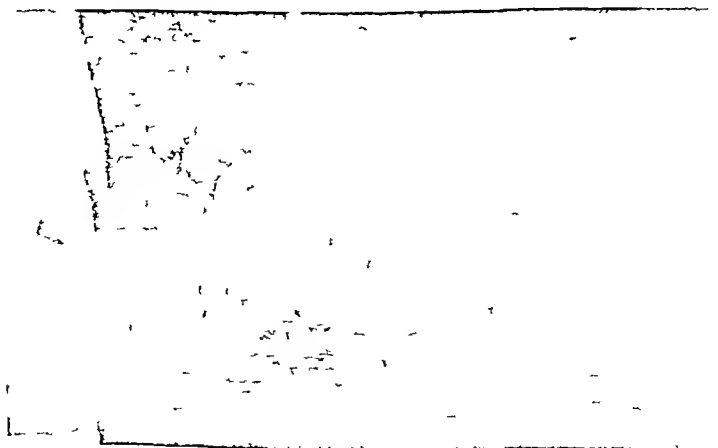


FIGURE 3
(Eczema—Repeated Attacks—Bread Baker)

interpretation of this data for the establishment of as definite a diagnosis as is possible under the existing conditions, and in expressing the diagnosis both medically and industrially

A first requisite in the matter of establishing a standard for guidance in solving some of these industrial and dermatological problems is a reliable detailed history. A typewritten or printed outline facilitates this work where a physician is seeing many such cases, and in addition tends to remind one of the essential factors if one is only occasionally seeing a case. This history

Previous skin conditions
relation to work
Present skin condition Duration Location
Progress
Symptoms
Treatment—internal
external
Stopped work Previous disability

The difficulties in the way of obtaining such a story are many, if one has to deal with a foreigner speaking little or no English, or an ignorant workman, especially one who is "cocksure"



FIGURE 2
(Radiodermatite—Physician)

should include first of all careful particulars of previous skin conditions and of the progress of the disease, as well as details of previous treatment. The outline used by the writer is as follows

Name Date
Address
Age Nationality M— S— Wid—
Occupation
Employer Referred by
History
General health—recent illnesses
symptoms of focal infection

that the "rash" was caused by a certain substance, or if many months have elapsed since the original onset and there has been much treatment and numerous attacks since then. Under any such conditions it is extremely difficult to arrive at the true facts upon which to base one's opinion. In dealing with interpreters it is most valuable if one can be obtained who can speak both languages well and at the same time is familiar with the actual conditions in the patient's working place.

I believe it is well to separate the history into two parts and that the second part should in-

clude a detailed account of the process at which the patient works and the substances which he handles. The details of the cleansing process used at the end of a working period are also essential, for the use of gasoline, naphtha, "flash," or some other quick cleaning agent may be at least a partial answer to the problem. Far too often the employees do not know the composition of the substances used and in such cases an examination of the working place or communication with the foreman or factory superintendent may be necessary. The writer uses the following outline

WORK

- Previous occupations
- How long with present firm
- Duration present job
- Details of process
- Details of substances handled
- Details of cleansing process—home—factory
- Any changes in process—in substances—in cleansing
- Any other individual affected
- Any work outside regular employment

Another important factor in the erection of our standards is an early and thorough examination of the individual's skin. Too often such patients are referred for an opinion or come for examination months after the original condition, and the manifestations have been altered by the patient's own treatment or other treatment, or by the mere passage of time. In making such an examination of the skin one must keep an eye open not only for manifestations consistent with industrial exposure, but also for evidences of non industrial dermatoses such as psoriasis, lupus erythematosus, etc., as well as for the possible self inflicted diseased processes although these latter are rather unusual. This examination, made early before much alteration has taken place, will enable a proper record to be made for correlation with the facts obtained in the history and thus aid greatly in the proper

disposition of the case. I suggest the following outline as adapted for this purpose

EXAMINATION

- General skin: Blond, brunette, moist, dry, oily, thin, hairy
- Eruption: Distribution, types, etc.
- Mucous membranes: glands, tongue, teeth, etc.
- Evidence of chemicals—of treatment
- Evidences of contagious diseases—syphilis, etc.
- Blood exam: Count, smear, Wass.

Now that the physician is in possession of the facts obtained from the history and from examination, what criteria may be adopted by which this data may be judged? This group of cases has no definite earmarks as a whole, though an occasional case may show stigmata of the occupation, as for example, certain calluses which will indicate definitely the type of work. There are, however, several factors which merit greater consideration and deserve to be weighed very carefully in an attempt to classify properly each individual case.

In the first place, the conclusive evidence given by the amelioration of the condition upon freedom from contact, and the evidence of repeated attacks upon exposure to conditions similar to those existing at the time of previous attacks (See Figure 3)

Secondly, the fact that the lesions found are consistent with the history of exposure to the substances claimed and at the time claimed. For example, I recall the case of the young man who had a keloid of the arm following a gasoline burn (See Fig 4)

It had been a rather rapid growth and there was some question as to whether the keloid antedated the burn or actually followed it as claimed.

Third, the fact that the individual is exposed to a substance or substances known to produce skin changes frequently. The most frequent occupations affected are

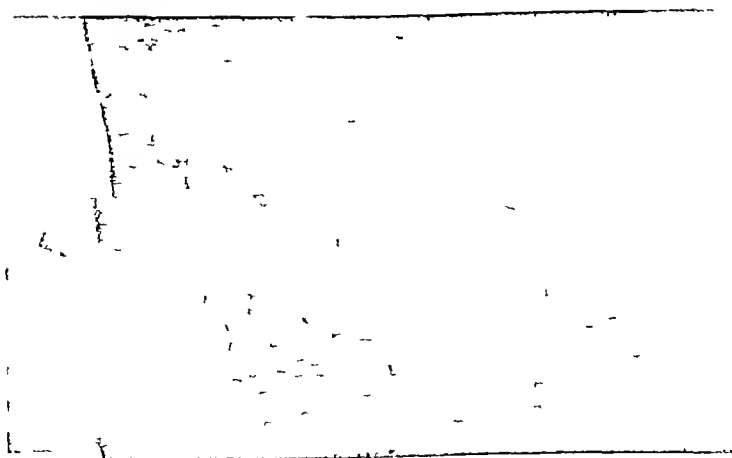


FIGURE 3.
(Eczema—Repeated Attacks—Bread Baker)

Occupation	Number of Cases of Dermatosis
Housework and allied work.....	702
Laborers	107
Painters	87
Metal workers.....	73
Mill workers.....	68
Oil and grease workers	67
Physicians, dentists, and nurses.....	57
Cloth handlers and tailors.....	49
Bakers	48
Tannery and leather workers.....	44
Chemical workers and drug workers.....	40

due to novocaine The relative frequency of involvement in these occupations will vary in different localities according to the type of industry located there

Fourth, the location of the lesions—the hands, or hands and arms, are most frequently affected, though I do not wish to give the impression from the photographs or from what I say that all industrial dermatoses are on these areas

A young man, a lithograph feeder for only three weeks, came in with an acute dermatitis (see Fig 5) of one week's duration He came in

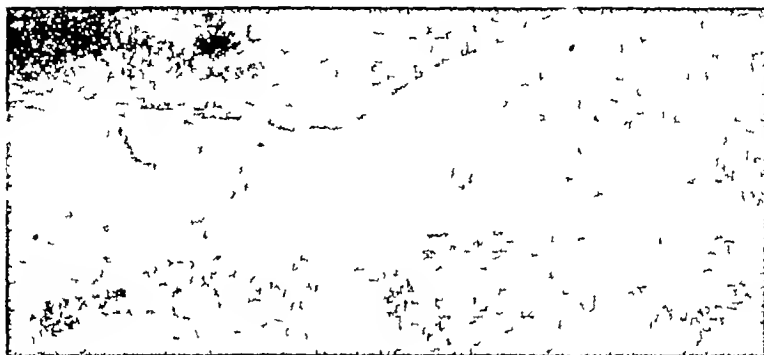


FIGURE 4
(Keloids Following Gasoline Burn)

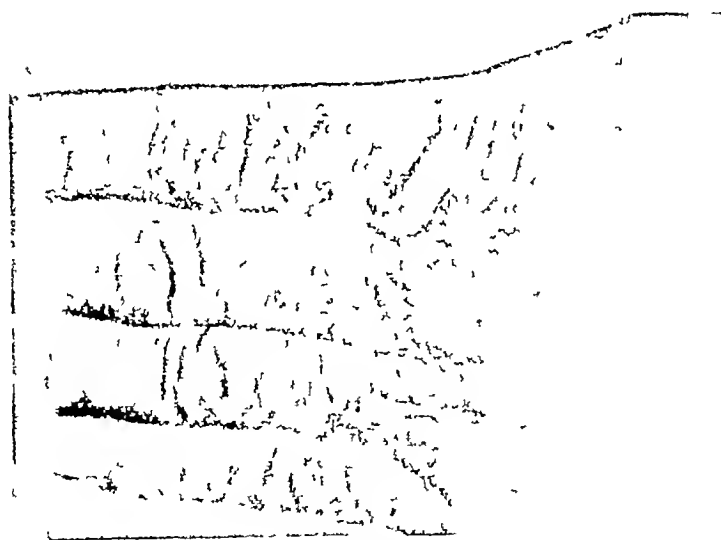


FIGURE 5
(Acute Dermatitis—Lithograph Feeder)

These figures were obtained from the analysis of statistics from four different sources Housewives and other allied soap and water workers form the largest group in every investigation of industrial skin conditions It is of interest that medicine and dentistry rank so high in this list But one must not fall into the error of thinking every eruption in an individual with such an exposure is industrial For example, by no means is every eruption on the hands of a dentist

contact with inks of various colors, and also dehydrating agents such as benzine, ether, and turpentine and used rather a strong soap

Another man, a farmer, showed a ringworm (see Fig 6) of the wrist, of animal origin undoubtedly The duration was about, three months A large spored ringworm was found in this lesion

A press feeder of five months presented a dermatitis (see Fig 7) of the hands of four

weeks' duration. He had been exposed to potash, to chloride of lime, to colored inks, to kerosene and had to use a strong soap.

Fifth, the lack of evidence of exposure to other substances outside the occupation which might have caused a similar change in the skin.

Sixth, the type of lesions, particularly the

(1) The first group includes the *definitely industrial* cases.

(2) The second group I speak of as *probably industrial*.

(a) The relation is less clear-cut.

(b) The individual may be working with a substance which less often causes skin changes.

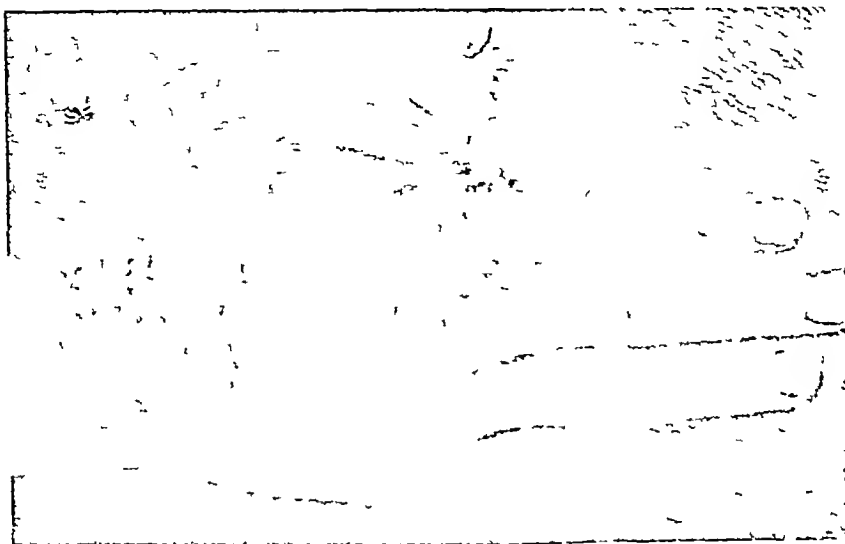


FIGURE 6
(Large Spored Ringworm in a Farmer)



FIGURE
(Dermatitis in a Press Feeder Probably from Alkalies)

negative evidence given by the characteristic lesions of a skin disease known to be non-industrial in nature—psoriasis for example though of course psoriasis and an industrial dermatitis can exist together.

Having obtained these facts about any individual case, there are four groups into one of which it ought to be placed for classification purposes.

(c) He may have lesions not quite characteristic or consistent with exposure.

(d) He may be examined a long time after the onset and the condition is nearly well.

If the scope of industrial cases is enlarged, as it is in some States, by the interpretation of industrial accident boards or other authorities that pre-existing conditions unfavorably influenced by occupation are included within the

Occupation	Number of Cases of Dermatosis
Housework and allied work.....	702
Laborers	107
Painters	87
Metal workers.....	73
Mill workers.....	68
Oil and grease workers.....	67
Physicians, dentists, and nurses.....	57
Cloth handlers and tailors.....	49
Bakers	48
Tannery and leather workers.....	44
Chemical workers and drug workers.....	40

due to novocaine The relative frequency of involvement in these occupations will vary in different localities according to the type of industry located there

Fourth, the location of the lesions—the hands, or hands and arms, are most frequently affected, though I do not wish to give the impression from the photographs or from what I say that all industrial dermatoses are on these areas

A young man, a lithograph feeder for only three weeks, came in with an acute dermatitis (see Fig 5) of one week's duration He came in

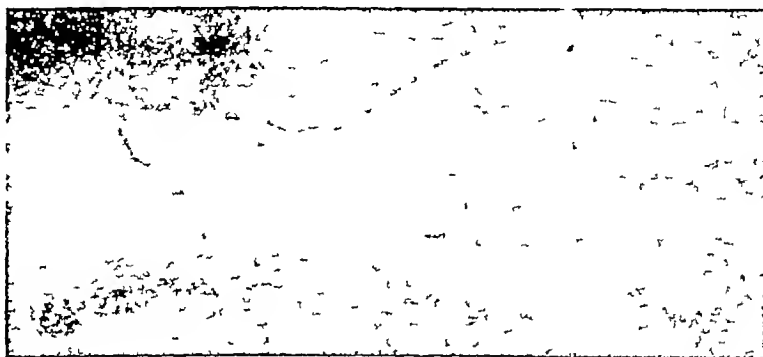


FIGURE 4
(Keloids Following Gasoline Burn)

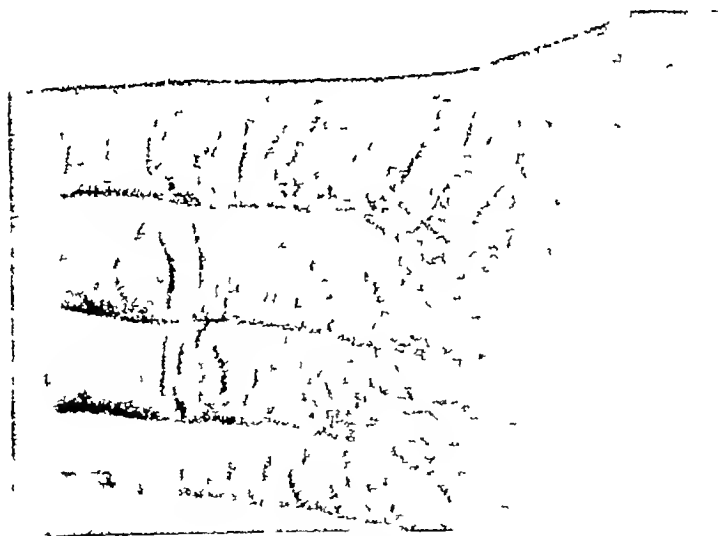


FIGURE 5
(Acute Dermatitis—Lithograph Feeder)

These figures were obtained from the analysis of statistics from four different sources Housewives and other allied soap and water workers form the largest group in every investigation of industrial skin conditions It is of interest that medicine and dentistry rank so high in this list But one must not fall into the error of thinking every eruption in an individual with such an exposure is industrial For example, by no means is every eruption on the hands of a dentist

contact with inks of various colors, and also dehydrating agents such as benzine, ether, and turpentine and used rather a strong soap

Another man, a farmer, showed a ringworm (see Fig 6) of the wrist, of animal origin undoubtedly The duration was about, three months A large spored ringworm was found in this lesion

A press feeder of five months presented a dermatitis (see Fig 7) of the hands of four

work of any kind where he meets with cases of possible skin change due to occupation I commend three fundamental measures

1 A careful study of the individual case including an accurate history of disease and work, together with a careful examination

2 The need of becoming familiar with the industrial processes and substances in the particular plant with which the patient is affiliated

3 A familiarity with the diagnosis and treatment of the eighteen most common skin diseases as shown below

MOST COMMON SKIN DISEASES

Eczema and Dermatitis	Warts (3 types)
Acne	Psoriasis
Urticaria	Epithelioma
Impetigo	Erysipelas
Herpes (2 types)	Erythema Multiforme
Furunculosis	Pityriasis Rosea

Ringworm (3 types)	Naevus (3 types)
Epidermophytosis	Rosacea
Pediculosis (3 types)	Keloid
Scabies	

This list is taken from several sources and represents rather accurately the relative frequency of the various diseases

Syphilis and exanthemata and the drug eruptions are sufficiently frequent to warrant being mentioned in this connection. Also one must not overlook the fact that minor conditions such as dandruff, ingrown nails, falling hair, moles, and chapped hands are matters which the industrial physician will be called upon to face

By the adoption of some such standards as I have outlined and with the knowledge of these fundamental measures I believe that the joint problems of industry and dermatology will be solved more readily and with greater satisfaction to patient, employer and perhaps to the physician

METASTATIC HYPERNEPHROMA OF THE JAW*

BY CHARLES F. BRANCH, M.D., AND RICHARD H. NOPTON, D.M.D.

THE present case, that of a hypernephroma, is of particular interest because of its metastasis to the jaw with no involvement of bone in that region. In no respect is this report intended as a review of hypernephromas. The relatively recent articles of Wright¹, Dresser², and Podlasky³, and the extensive exposition in Ewing's "Neoplastic Diseases,"⁴ thoroughly cover the field, bringing its bibliography up to date. As far as we can determine the only other case on record in which the tumor found its way to the jaw is reported by Dresser but differs from the present case in that it was a bone metastasis.

The accompanying photographs indicate the type of tumor and its manner of growth. Descriptions of the gross and histological examinations will be found in their respective positions in the necropsy report. A brief resume of the case history follows.

A woman 64 years old was admitted to the Special Service of the Massachusetts Homeopathic Hospital as Case No. 177,809 on September 25, 1926, complaining of inability to swallow.

Family History. Unimportant.

Past History. Dental—the local dentist had made several attempts to close a discharging fistula on the lingual surface of the mandible opposite the inferior right second bicuspid tooth. The treatment had consisted of "pumping" 5% phenol through the root canal of the tooth out through the fistulous opening. This treatment had covered a period of about one year and a half previous to March 1926 and had not met with success. At this time the local dentist had become alarmed about a growth that was developing in the vicinity of and including the fistula.

From the Massachusetts Homeopathic Hospital and Boston University School of Medicine, Boston, Massachusetts.

*For records and addresses of authors see "This Week's Issue" page 59.

Present Illness. The patient was seen for the first time by the oral surgeon on March 26, 1926. On the lingual surface of the right side of the mandible and the surface of the right sublingual gland there was noted a growth resembling an epulis which had been developing since September 1925. The involved area was removed by a radical operation followed by the application of the actual cautery apparently eliminating the growth and enabling the patient to masticate comfortably. At that time a pathologist returned a report on the excised tumor classifying it as an epidermoid carcinoma. The growth appeared again in August, 1926, and four platinum seeds of radium amounting to 14.8 millicuries were imbedded September 8, 1926, for ten days. At that time the patient had a severe fall injuring her spine and left hip.

Physical Examination. Right side of mouth and the contiguous portion of the tongue showed a marked pathological condition having a chewed out appearance as though tissue had been surgically removed. Examination otherwise negative.

Laboratory Findings. The X-ray examination showed increased density of both lungs resembling consolidation of the right middle and lower lobes suggestive of tumor metastasis. Skull, spine and pelvis were negative. No other laboratory examinations were made.

Clinical Record. On September 28, 1926, the patient appeared dazed and showed a left-sided hemiplegia and a rapid and irregular heart. On September 29 a bilateral paralysis was noted. On September 30 the patient entered a state of coma and died at 9:15 P. M.

The clinical diagnosis was Carcinoma of the tongue.

AUTOPSY REPORT

The body is that of a poorly developed fairly well nourished white adult female 64 years of age. Body length 163 cm. Twelve hours postmortem. Rigor mortis complete. No edema. Slight postmortem lividity of dependent parts. The skin over the entire body shows a marked atrophic condition and over the abdomen spread out in a fanlike manner from the

Workman's Compensation Act, this group is measurably increased in number

(3) In the third group are the *doubtful* or the *possible* cases, in which

(a) There may be a still greater discrepancy in the story

(b) The lesions may be more indefinite

(c) The individual is working with a substance which only produces very seldom a skin change and he shows no characteristic lesion

(d) The lesions are explainable as well or better by other means

(4) In the fourth group are the *definitely non-industrial* cases

The first two groups I am accustomed to class as industrial, and the last two as non-industrial, so far as compensation is concerned

In expressing the diagnosis on these cases it has been my habit to class them as an industrial dermatosis ("DI"), qualifying this according to the type and cause. This may be illustrated best, perhaps, by referring to a carpenter who had had repeated attacks following contact with alkali in a print works. He had an acute attack at the last visit which kept him from work. His diagnosis and disability would be expressed as follows

	Type	Cause or occupation
<i>Dermatosis Industrialis</i>		
Prob		
Poss	<i>Chronic Dermatitis</i>	<i>Carpenter</i>
Not		<i>Alkali</i>
<i>Disability—total—temporary—permanent—recurrent</i>		

This method has already proved valuable in the study of groups of workers and the causal agents because it makes it so much easier to refer back to these factors. Disability in this class of cases can be rated just as surgical or orthopedic cases are rated by referring to them as temporary or permanent, partial or total, immediate or late, or recurrent

It is not possible to speak of industrial dermatoses without mentioning hypersusceptibility or sensitization, for these industrial cases are, with few exceptions, examples of an increased susceptibility to a certain substance. It has been found, however, that recent skin irritations and recent intercurrent diseases, as well as our old friend focal infections, may play a part in bringing about this sensitization, and these facts may be made use of by full-time industrial physicians in the matter of not assigning individuals to jobs known to cause a high rate of skin change

In the matter of treatment, because of the great variety of skin changes due to occupation it is difficult to suggest standards of treatment. On the record it is my habit to outline the treatment as follows

TREATMENT

Local

General

Hospital

Preventive

Mechanical chemical after process

Give up job—temporarily—permanently

Advice re returning to work

About ten years ago, Dr C J White enumerated forty-six different skin diseases in which it was possible for occupation to be a causative factor. The most frequent ones are given in this list, and are divided into the non-infectious group and the infectious group

THE MOST FREQUENT MANIFESTATIONS OF SKIN DISEASE DUE TO OCCUPATION

Non Infectious	Infectious
Acne	Actinomycosis
Burns	Anthrax
Calluses	Blastomycosis
Chilblains	Erysipeloid
	Impetigo
Dermatitis, Acute	Paronychia
Dermatitis, Chronic	Pus Infections
Eczema	Syphilis
	Tinea
Epithelioma	Tuberculosis
Folliculitis	
Keloids	
Keratosis	
Radiodermatitis	
Ulcers	

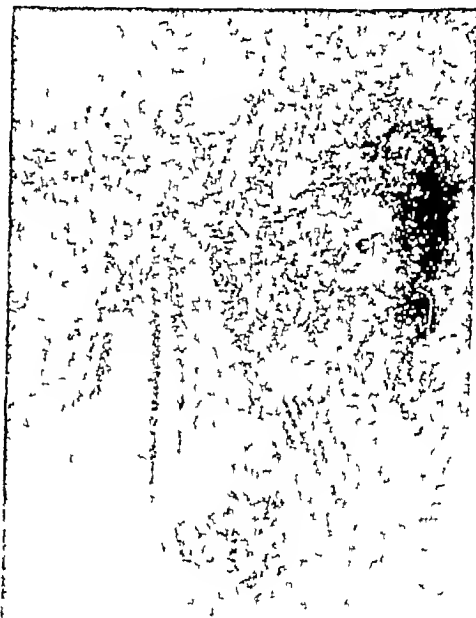


FIGURE 8

(Cancer of Scrotum in a Mule Spinner—24 Years Exposure (After Prosser White))

In regard to treatment, suffice it to say that this differs in no way in industrial cases from that employed for the same manifestations in non industrial cases. But added to the treatment, and an integral part of it, is prevention, which depends absolutely upon the diagnosis of the actual causal factor, and its removal. Such preventive measures may consist of mechanical methods, or chemical means, or the adoption of a different technique, or the transfer of the individual to another job

For the physician who is doing industrial

work of any kind where he meets with cases of possible skin change due to occupation I commend three fundamental measures

1 A careful study of the individual case including an accurate history of disease and work, together with a careful examination

2 The need of becoming familiar with the industrial processes and substances in the particular plant with which the patient is affiliated

3 A familiarity with the diagnosis and treatment of the eighteen most common skin diseases as shown below

MOST COMMON SKIN DISEASES

Eczema and Dermatitis	Warts (3 types)
Acne	Psoriasis
Urticaria	Epithelioma
Impetigo	Erysipelas
Herpes (2 types)	Erythema Multiforme
Furunculosis	Pityriasis Rosea

Ringworm (3 types)	Naevus (3 types)
Epidermophytosis	Rosacea
Pediculosis (3 types)	Keloid
Scabies	

This list is taken from several sources and represents rather accurately the relative frequency of the various diseases

Syphilis, the exanthemata, and the drug eruptions are sufficiently frequent to warrant being mentioned in this connection. Also one must not overlook the fact that minor conditions such as dandruff, hangnails, falling hair, moles, and chapped hands are matters which the industrial physician will be called upon to face

By the aid of some such standards as I have outlined and with the knowledge of these fundamental measures I believe that the joint problems of industry and dermatology will be solved more readily and with greater satisfaction to patient, employer and perhaps to the physician

METASTATIC HYPERNEPHROMA OF THE JAW*

BY CHARLES F. BRANCH, M.D., AND RICHARD H. NORTON, D.M.D.†

THE present case, that of a hypernephroma, is of particular interest because of its metastasis to the jaw with no involvement of bone in that region. In no respect is this report intended as a review of hypernephromas. The relatively recent articles of Wright¹, Dresser², and Podlasky³, and the extensive exposition in Ewing's "Neoplastic Diseases"⁴ thoroughly cover the field, bringing its bibliography up to date. As far as we can determine the only other case on record in which the tumor found its way to the jaw is reported by Dresser but differs from the present case in that it was a bone metastasis.

The accompanying photographs indicate the type of tumor and its manner of growth. Descriptions of the gross and histological examinations will be found in their respective positions in the necropsy report. A brief résumé of the case history follows.

A woman 64 years old was admitted to the Special Service of the Massachusetts Homeopathic Hospital as Case No. 177,809 on September 25, 1926, complaining of inability to swallow.

Family History. Unimportant.

Past History. Dental—the local dentist had made several attempts to close a discharging fistula on the lingual surface of the mandible opposite the inferior right second bicuspid tooth. The treatment had consisted of 'pumping' 5% phenol through the root canal of the tooth out through the fistulous opening. This treatment had covered a period of about one year and a half previous to March 1926 and had not met with success. At this time the local dentist had become alarmed about a growth that was developing in the vicinity of and including the fistula.

Present Illness. The patient was seen for the first time by the oral surgeon on March 26, 1926. On the lingual surface of the right side of the mandible and the surface of the right sublingual gland there was noted a growth resembling an epulis which had been developing since September 1925. The involved area was removed by a radical operation followed by the application of the actual cautery apparently eliminating the growth and enabling the patient to masticate comfortably. At that time a pathologist returned a report on the excised tumor classifying it as an epidermoid carcinoma. The growth appeared again in August, 1926, and four platinum seeds of radium amounting to 148 milligrams were imbedded September 8, 1926, for ten days. At that time the patient had a severe fall injuring her spine and left hip.

Physical Examination. Right side of mouth and the contiguous portion of the tongue showed a marked pathological condition having a chewed out appearance as though tissue had been surgically removed. Examination otherwise negative.

Laboratory Findings. The X-ray examination showed increased density of both lungs resembling consolidation of the right middle and lower lobes suggestive of tumor metastasis. Skull, spine and pelvis were negative. No other laboratory examinations were made.

Clinical Record. On September 28, 1926, the patient appeared dazed and showed a left-sided hemiplegia and a rapid and irregular heart. On September 29, a bilateral paralysis was noted. On September 30, the patient entered a state of coma and died at 9:15 P. M.

The clinical diagnosis was Carcinoma of the tongue.

AUTOPSY REPORT

The body is that of a poorly developed fairly well nourished white adult female 64 years of age. Body length 163 cm. Twelve hours postmortem. Rigor mortis complete. No edema. Slight postmortem lividity of dependent parts. The skin over the entire body shows a marked atrophic condition and over the abdomen spread out in a fan-like manner from the

*From the Massachusetts Homeopathic Hospital and Boston University School of Medicine, Boston, Massachusetts.

†For records and addresses of authors see "This Week's Issue" page 592.

Workman's Compensation Act, this group is measurably increased in number

(3) In the third group are the *doubtful* or the *possible* cases, in which

(a) There may be a still greater discrepancy in the story

(b) The lesions may be more indefinite

(c) The individual is working with a substance which only produces very seldom a skin change and he shows no characteristic lesion

(d) The lesions are explainable as well or better by other means

(4) In the fourth group are the *definitely non-industrial* cases

The first two groups I am accustomed to class as industrial, and the last two as non-industrial, so far as compensation is concerned

In expressing the diagnosis on these cases it has been my habit to class them as an industrial dermatosis ("D I"), qualifying this according to the type and cause. This may be illustrated best, perhaps, by referring to a carpenter who had had repeated attacks following contact with alkali in a print works. He had an acute attack at the last visit which kept him from work. His diagnosis and disability would be expressed as follows

	Type	Cause or occupation
<i>Dermatosis Industrialis</i>		
Prob		
Poss	<i>Chronic Dermatitis</i>	<i>Carpenter</i>
Not		<i>Alkali</i>
<i>Disability—total—temporary—permanent—recurrent</i>		

This method has already proved valuable in the study of groups of workers and the causal agents because it makes it so much easier to refer back to these factors. Disability in this class of cases can be rated just as surgical or orthopedic cases are rated by referring to them as temporary or permanent, partial or total, immediate or late, or recurrent

It is not possible to speak of industrial dermatoses without mentioning hypersusceptibility or sensitization, for these industrial cases are, with few exceptions, examples of an increased susceptibility to a certain substance. It has been found, however, that recent skin irritations and recent intercurrent diseases, as well as our old friend focal infections, may play a part in bringing about this sensitization, and these facts may be made use of by full-time industrial physicians in the matter of not assigning individuals to jobs known to cause a high rate of skin change

In the matter of treatment, because of the great variety of skin changes due to occupation, it is difficult to suggest standards of treatment. On the record it is my habit to outline the treatment as follows

TREATMENT

Local

General

Preventive

Mechanical, chemical alter process

Give up job—temporarily—permanently

Advice re returning to work

Hospital

About ten years ago, Dr C J White enumerated forty-six different skin diseases in which it was possible for occupation to be a causative factor. The most frequent ones are given in this list, and are divided into the non-infectious group and the infectious group

THE MOST FREQUENT MANIFESTATIONS OF SKIN DISEASE DUE TO OCCUPATION

Non Infections	Infectious
Acne	Actinomycosis
Burns	Anthrax
Calluses	Blastomycosis
Chilblains	Erysipeloid
	Impetigo
Dermatitis, Acute	Paronychia
Dermatitis Chronic	Pus Infections
Eczema	Syphilis
	Tinea
Epithelioma	Tuberculosis
Folliculitis	
Keloids	
Keratosis	
Radiodermatitis	
Ulcers	



FIGURE 8
(Cancer of Scrotum in a Mule Spinner—24 Years Exposure
(After Prosser White))

In regard to treatment, suffice it to say that this differs in no way in industrial cases from that employed for the same manifestations in non industrial cases. But added to the treatment, and an integral part of it, is prevention, which depends absolutely upon the diagnosis of the actual causal factor, and its removal. Such preventive measures may consist of mechanical methods, or chemical means, or the adoption of a different technique, or the transfer of the individual to another job

For the physician who is doing industrial

is firm smooth, regular, light reddish brown in color. The capsule strips from the cortex with ease leaving a smooth surface. The cut surface shows normal relationship between pyramids and cortex the latter measuring 6 mm. in width. Between the pyramids and cortex at two different points are small rounded encapsulated masses of soft, hemorrhagic, yellowish brown tissue measuring about 1 cm in diameter.

Adrenals Not remarkable.

Gastro-intestinal Tract Negative throughout its entire course.

Bladder Contains about 50 cc of rather turbid, foul-smelling fluid. Mucosa not remarkable.

Uterus, Tubes, and Ovaries Negative.

Aorta Shows a slight degree of atheromatous degeneration throughout its entire course.

Brain Not examined.

PATHOLOGICAL DIAGNOSES

Hypernephroma of left kidney

Metastases to right kidney, liver, lungs and jaw

Slight coronary sclerosis

Slight mitral and aortic sclerosis

Slight general arteriosclerosis

Slight bronchopneumonia

MICROSCOPICAL EXAMINATION

Lung In many places the alveoli are distorted or entirely supplanted by rounded masses of tumor tissue, varying in size from 1 to 10 mm. These nodules are composed of small circular cell groups separated by fine strands of connective tissue so that in no way is tubule formation suggested. In places the cords and strands of large clear cells forming these groups are closely packed while in other regions they appear as elongated loosely arranged cords as in the zona fasciculata. The cells making up these masses vary greatly in size and shape some being polyhedral some rounded while others are distinctly fusiform. Practically all of them contain numerous small clear vacuoles are very finely granular and stain faintly acidophilically giving a characteristic foamy appearance. Some of these cells are multinucleated. In all the nuclei stain brightly but are distinctly vesicular in character and many are undergoing mitotic division. These nodules are surrounded by zones of increased vascularity in which all the vessels are markedly injected but particularly the interalveolar capillaries which seem to be distended to tremendous proportions and in some instances are indistinguishable from alveoli distended with red cells. In some places the tumor tissue is apparently growing through this hemorrhagic zone and the alveoli immediately outside are filled to varying degrees with cells of the same type as the tumor mass some being arranged in cords others being loosely scattered about. Outside this area of tumor infiltration the alveoli and bronchi contain varying amounts of coagulated serum, neutrophils desquamated epithelium and some strands of fibrin. In places these elements are so concentrated that they may well be considered a pneumonic process.

Liver Two tumor masses in this organ show the same microscopical picture observed in the lung except that here there is no evidence of invasion the tumor seeming to destroy by an expansive process. The nodules are definitely surrounded by fibrous tissue beyond which the tumor cells have not trespassed. Here as in the lung large areas of increased vascularity are very prominent giving the impression at first glance of a cavernous hemangioma. These distended vessels have no particular relation to the central veins or to the portal units. The liver cells throughout the section vary greatly in size shape and staining reaction. They contain clear vacuoles of various size and much finely granular golden

brown pigment. The cords are distinctly shrunken and the sinusoidal bile capillaries and connective tissue stand out markedly giving the general appearance of a periportal increase of connective tissue.

Kidneys The same type of tumor is present in both of these organs as was described in the lung except that the left kidney is practically destroyed by the tumor mass while the right kidney shows only two small tumor masses in its cortical portion. Here also the mass seems to be definitely encapsulated and growing by expansion rather than by invasion. Immediately surrounding the tumor is a band of compressed atrophic tubules and glomeruli. Scattered throughout the remaining parenchyma in a most peculiar manner are areas of marked congestion having no apparent relation to the lesions present. The epithelium of many tubules is swollen coarsely granular and the nuclei are evidently undergoing karyolysis. Many hyaline casts present. The glomeruli are unaccountably congested and a few are sclerosed.

Mass from Right Jaw The epithelial covering of this area is intact. Immediately beneath the epithelium and separating it from the tumor proper is a thin band of connective tissue about 5 of a mm in width. Beneath this connective tissue the tumor extends as a definitely encapsulated mass about a centimeter in diameter and 2 cm in length. The histological structure of this tumor is identical in every respect with that of the original mass in the left kidney except that the tumor itself seems distinctly more hemorrhagic there being in its central portion two or three small telangiectatic areas. Here it is possible to find the tumor cells growing within the laminae of occasional vessels. No evidence of growth is present in the bone.

The remaining organs are relatively negative.

MICROSCOPICAL DIAGNOSIS

Hypernephroma of left kidney

Metastasis to right kidney, liver, lungs and jaw

Slight bronchopneumonia

REFERENCES

- 1 Wright H. W. S. Study of surgical pathology of hypernephroma with special reference to their origin and symptomatology. *Brit J Surg* 1922 IX 338-365.
- 2 Dresser R. Metastatic manifestations of hypernephroma in bone. *Am J Roent* 1925 VIII 342-353.
- 3 Podlasky H. B. Hypernephroma. *Am J Roent* 1923 "14-15."
- 4 Ewing J. *Neoplastic Diseases* 2nd ed 738-767.

UNITED STATES CIVIL SERVICE EXAMINATIONS

Physicist (X ray) \$3,500 a year
Associate Physicist (X ray) \$3,000 a year
Assistant Physicist (X ray) \$2,400 a year
Physical Chemist (X ray) \$3,500 a year
Associate Physical Chemist (X ray) \$3,000 a year
Assistant Physical Chemist (X ray) \$2,400 a year
Applications must be on file with the U S Civil Service Commission at Washington D C not later than May 8 1928.

Apply to the United States Civil Service Commission for particulars

UNITED STATES PUBLIC HEALTH SERVICE

ASSIGNMENT OF DR SCHERESCHESKY

Surgeon J W Schereschewsky Directed to proceed from Boston Massachusetts to Washington D C and return in connection with field investigations of cancer April 16 1928

ensiform and the lower margin of the ribs are radiating rows of pigmented nevi. No palpable glands. Pupils equal and regular, 4 mm in diameter. Scalp is covered by a fair amount of iron gray hair. Ears and nose negative. Mouth shows a marked pathological condition. The upper teeth are replaced by a plate. Lower teeth on the left and right sides are absent, and the few remaining in front are in very poor condition. In the space made by the absence of the teeth on the right the gum is distinctly swollen,



FIGURE 1. Section of tumor from the jaw. Note in particular the clear vacuolated cells arranged within the finely dividing stroma.

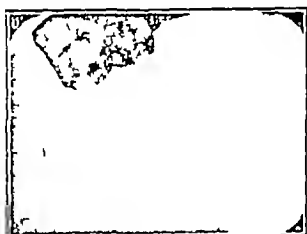


FIGURE 2. X ray of jaw before operation. March 26 1926

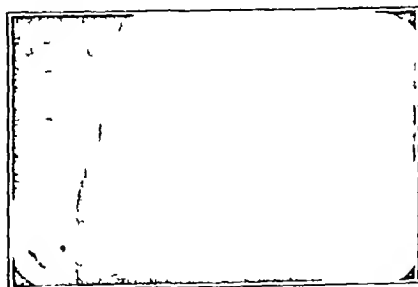


FIGURE 3. Same area as Figure 2 after operation. May 17 1926

white, and firm. Examination shows that a portion of the right side of the tongue about 2 cms in diameter has been removed. On section the jaw tumor is found to be composed of a rather soft, hemorrhagic yellowish white tissue, which seems to be arranged in small more or less encapsulated masses. The underlying bone and periosteal tissue is not involved.

Abdominal Cavity Contains no abnormal fluid or adhesions. The mesenteric lymph nodes are not remarkable. The diaphragm on the left is at the fifth space on the right at the third space. The appendix is retrocaecal and firmly adherent. In the left hypogastric region there is a soft, hemorrhagic mass about

15 cm in diameter extending into the abdominal cavity about half its diameter.

Pleural Cavities No abnormal fluid or adhesions.
Pericardial Cavity No abnormal fluid or adhesions.

Heart Approximate weight, 210 gms. The epicardium, which is not remarkable, covers a small amount of subepicardial fat. The myocardium is dark reddish brown, soft, and flabby. The endocardium is slightly thickened at the aortic and mitral bases, otherwise not remarkable. Valves negative. Coronaries show a slight degree of atheromatous degeneration. Foramen ovale closed.

VALVE MEASUREMENTS

Tricuspid	115 cm
Pulmonic	75
Mitral	90
Aortic	75
Left ventricle	15
Right ventricle	02

Right Lung 24x13x6 cms. Uniformly studded with firm white nodules about 1 cm in diameter, which project slightly above the surface. The pleural surface is smooth, glistening, and distinctly mottled with small red patches, which in all instances seem to be adjacent to the nodules above mentioned. The cut surface shows the bronchi to be distinctly injected and covered with thin muco-purulent material. The cut surface of the lung is diffusely studded with small, firm, raised, whitish yellow, and distinctly hemorrhagic nodules about 1 cm in diameter, similar to those extending downward from the surface. In these areas the alveoli are apparently obliterated, elsewhere they are well distended.

Left Lung Similar in every respect and all measurements to its fellow on the right.

Spleen Approximate weight, 110 gms. It is dark purple, firm, smooth, regular, and slightly enlarged. The cut surface is dark reddish brown, the trabeculae are well defined, and there is a moderate amount of pulp upon scraping. Germinal centers indistinct.

Liver Slightly enlarged and weighs approximately 1800 gms. It is firm, smooth, dark reddish brown and quite regular except for two small, raised, slightly nodular yellowish brown and somewhat softer areas, measuring about 2 cm in diameter on the upper surface of the right lobe. The cut surface shows the normal lobulations well defined, except where they are broken by occasional very soft, hemorrhagic yellowish brown masses of tissue varying in diameter from 2 to 6 cms. These areas appear to be perfectly encapsulated and there are several of them scattered throughout the parenchyma including the downward projection of the two masses seen on the surface.

Gall bladder Wall not thickened, mucosa negative, no stones, all ducts patent.

Left Kidney Approximate weight, 800 gms. Normal contour entirely distorted. A large irregular mass 10 cm in diameter surmounts what remains of the lower pole of the kidney. The capsule over the entire organ strips with ease, leaving a smooth, slightly hemorrhagic surface. The cut surface discloses a very hemorrhagic, irregularly mottled yellowish mass in the upper pole, which is distinctly softer than the relatively normal tissue. The central portion of this mottled yellowish gray area is transparent and exudes much fluid upon pressure. Separating this tumor mass from the lower pole of the kidney seems to be a thin band of connective tissue. There is no apparent invasion. The lower pole of the kidney shows the normal relationship between cortex and pyramids. It is dark reddish brown and congested. The tumor mass found in this organ is by far the oldest growth found in the body.

Right Kidney Approximate weight 150 gms. It

Dr E Emery-Roberts, Great Britain, in the same year, expressed it as his opinion that primary, superficial papilloma of the ovary is derived from the germinal epithelium and underlying connective tissue stroma. The acini in the periphery of the ovary are derived from ingrowths of the germinal epithelium. The vesicles which form so large a proportion of the papillary projections result from papillae whose connective tissue cores have undergone edematous degeneration. The secondary deposits arise from disrupted papillae, the secondary deposits are favored by ascites. The collection of fluid in the abdomen represents the secretion of the epithelium forming the outer covering of the growths.

The next report was by Dr Brooks H Wells in 1912 at a meeting of the New York Obstetrical Society who reported a case of papillary carcinoma of the Ovary. The patient age 56, mother of two children had passed the menopause between 49 and 50 with no pelvic symptoms since then until the present trouble. Three years ago she had been operated upon by a skilled surgeon for acute appendicitis from which she made a slow recovery, drainage being employed for several weeks. At this time there was no evidence of pelvic trouble.

Last July she had a slight fall which hurt her back and right hip. Since then there had been some backache and slight soreness for which she had been treated by her physician for gravel. On September 14 she began to have active pain over the lower abdomen and right hip, down the anterior crural, and sciatica. She had noticed a loss of weight and strength since July and looked thin and old. Her appetite was very poor and she was troubled with constipation.

Dr Wells saw her September 18 and found a firm, cystic immovable mass filling the pelvis and extending up into the abdomen on the right side, the uterus being pushed to the left. A physical examination showed no other abnormal conditions. Diagnosis of adherent ovarian cyst, probably malignant, was made. The patient was sent to a hospital and an operation was performed the day after admission. Operation was by median incision. A pseudointra-ligamentous cystic tumor of the ovary was enucleated with some difficulty and removed. There were no adhesions about the region of the appendix.

The vitality of the patient after the operation was very much depressed and she made a slow recovery. Her temperature on admission was 101 deg F and remained there until 48 hours after the operation. On the 12th day the wound, which was thought to be perfectly healed began to break and opened up its full length down to the fascia, discharging a few drops of a yellow, serous, sterile fluid. December 20, there were evidences of recurrence manifested by continued failure in strength and severe pain in the

pelvic region underlying the site of the tumor.

The tumor about the size of a small grape fruit, was a cyst of the ovary filled with a bran-like mass of some necrotic material, characteristic of mixed cell sarcoma. A section from a portion of the tumor, not necrotic, showed masses of undifferentiated cells (embryonal type) which varied much in shape, size and configuration and between which could be seen intercellular connective tissue.

This section seemed to present points of unusual interest and to settle matters, was sent to a number of prominent pathologists, with the following results. One held that it was a mixed cell sarcoma of the type embryonal, as distinct from fibrosarcoma. This class has also been called alveolar sarcoma, from the fact that the cells are somewhat separated by broader connective septa. He found great variability of the cells, the intercellular substance and the giant cells.

The second pathologist said it was not sarcoma, but that the cells were characteristic of an epithelial tumor, a carcinoma.

The third took the position that it was a teratoma saying that a year or two ago it would have passed as an alveolar sarcoma, but that now, from analogy with testicular tumors of a similar character, it must be classed as a teratoma.

The slide was then sent to a pathologist in Vienna who inclined to the opinion that it was an endothelioma.

They all agreed on one point that it was an embryonal tumor of rapid growth and great malignancy.

The apparent rarity of the tumor and these divergent opinions from men of the highest rank in the work of pathology led to the most careful examination from many portions of the growth, which finally revealed a minute area of unaffected ovarian tissue and the advancing border of the neoplasm which was invading this gave the unmistakable picture of an ordinary adenocarcinoma of the ovary. The older portions of the tumor, where the cells had become undifferentiated, gave little on which to base a diagnosis.

Dr John Van Doren Young reports the next case (1913). His patient was 45, a widow. Some fourteen years ago she had an operation for laceration of the cervix. She has lost 29 pounds in two years. Notes pains in the abdomen for the past six months, her bladder began to irritate her two years ago. One month ago she was treated for cystitis. On July 11, 1912 her condition was diagnosed as retroverted uterus, with multiple cysts of both ovaries of large size.

She was operated on at the Polyclinic Hospital July 17, 1912. The usual median incision. On opening the peritoneum, large amount of

NEW HAMPSHIRE SURGICAL CLUB

PAPILLOMA OF THE OVARY*

BY EUGENE B. EASTMAN, M.D., F.A.C.S.†

PAPILLOMA of the ovary is described as the rarest cystic disease of the ovary, decidedly obscure in its etiology, variable in its course, and uncertain as to its prognosis. The usual age of its occurrence is between forty and fifty years. It is a bilateral disease, developing simultaneously in both ovaries. The two cysts are apt to be of different sizes, and the disease is likely to be more advanced in one than in the other.

There is practically no unity of opinion as to the origin of these bodies, but the theory advanced by Goodall is the one most commonly accepted and is to the effect that all epithelial structure within the ovary is from the germinal epithelium, and he declines to believe that it is possible for any tumor to develop from the Graafian follicle. In the late stages they are generally characterized by the abundance and prominence of the papillomatous growths. In the early stage the capsule is firm, smooth and thin, and projecting from the inside of the cyst wall over the papillomatous growths. They vary greatly in size and in number, depending on the stage of the disease. They may appear in the early stage as small, warty, pea-sized elevations along the interior wall of the cyst. At the other extreme the papillomata may form enormous irregular, cauliflower growths, filling almost the entire cyst cavity, and be so closely packed together as to present the appearance of a solid tumor. The papillomatous growths are soft, semi-gelatinous, glistening, shiny and sticky. The color depends upon the blood supply. In some cases it is pinkish, in others a dirty yellow or grey. The fluid in the cyst is characterized by the absence of pseudomucin and the presence of a large amount of albumin. Degeneration of one sort and another, and hemorrhage change the appearance of the fluid. This is practically the description given by Gibbon.

One of the early reports from physicians in this country was that of Le Roy Browne (1908) who presented a specimen of pseudomucinous papillary adenoma of both ovaries at a meeting of the New York Obstetrical Society.

The patient, 39, came to the Woman's Hospital in a condition of extreme exhaustion, bluish grey color, arms cold to the elbows, pulse hardly perceptible, respiration very rapid. After some hours or rest in bed and stimulation, the pulse

appeared, but the respiration was still as rapid. The abdomen was much distended with fluid, together with a large tumor extending to the umbilicus. The patient stated that for two years the abdomen had been enlarged, growing gradually worse. Two weeks before she had fainted at her work and was taken to Bellevue Hospital, where a diagnosis of perhaps pneumonia was made. She left voluntarily in a few days on account of fear.

At the Woman's Hospital, when there was no improvement after two or three days, she was treated by an exploratory operation. The free fluid, sticky in character, was liberated and cleared out as much as possible. A large tumor was found in the right ovary, with no adhesions or implantations. At the time of removal a similar, smaller tumor was recognized in the left ovary. This filled the true pelvis. It was not disturbed on account of the patient's condition. The recovery was uneventful and the physical condition showed an almost amazing improvement.

Three weeks after the first operation the abdomen was opened for the removal of the second tumor in the left ovary. It had increased in size, projecting now beyond the true pelvis. This also had a good pedicle, was easily removed, and found to have no adhesions or implantations. In three weeks the patient was discharged in full physical health. Both tumors were made up of small cysts with papillary outgrowth between the cyst walls.

Pathology as given by Dr. Jessup. The specimens have both been mounted in the gelatine medium and are presented together with slide for inspection. Papillary tumors of this kind in about 50 per cent of the cases occur on both sides. They give a benign history in so far as they show no tendency to form new colonies by implantation.

Kelly states that in seven cases he found implantations in one, and in this the second colony was not of a papillary character but was composed of minute, glassy cysts. This class of tumor is of the well-known polycystic type, but differs in the absence of the large cyst, thus being replaced by many small ones. They also differ from the cystic papilloma in that the papillary outgrowths chiefly occupy the space between the cysts. The pseudomucin present in such abundance in the ascitic fluid and in the contents of the cysts has long ago been shown by Pfannenstiel to be a secretion of the epithelial cells and not a form of degeneration.

*Read at the 30th annual meeting of the New Hampshire Surgical Club held at Laconia, N. H. September 19, 1917.

†For record and address of author see This Week's Issue page 592.

barium enema revealed the colon normal, except that it was pushed out on both sides by some mass

Operation (September 23) A large ovarian tumor extending away up in the intercostal region, was removed through an excision extending from the pubis to about three inches above the umbilicus. The tumor was removed without aspiration, as it was thought possible it might be a malignant intraovarian papilloma. The tumor was given to the pathologist who found that it contained a papillary cystadenoma.

The other ovary was apparently normal in size and appearance. These papillary cystadenomata are apt to be bilateral and a study of his previous cases showed that these growths occurred in the other ovary and that a second operation was usually necessary. For this reason the other ovary was removed and, upon examination in the pathological laboratory, was found to contain a small papillary cystadenoma about 1 cm in diameter, close to the surface of one pole. The case shows the absolute necessity of removing both ovaries, even in young women, with this type of tumor.

We now come back to Dr Le Roy Browne, who reported a case in 1908 which has already been considered. At a meeting of the Section on Obstetrics and Gynecology of the New York Academy of medicine, of date November 28, 1922, he reported a case of ovarian papilloma with secondary involvement of the abdominal wall eighteen years after subtotal hysterectomy for fibroid with retention of adnexa, which seems worth reporting in toto.

The patient, a married woman without children first came under Dr Browne's care in 1904, being then 34 years old. She then presented a bleeding fibromyoma, reaching to the umbilicus. A sub-total hysterectomy was done, with retention of the both ovaries and tubes. Recovery was smooth and athermic.

The patient was not seen again until August, 1922 which was eighteen years after the original operation. Up to a year before she had been in excellent health. She first noticed a painless lump in the abdominal wall to the left of the section scar. The lump increased in size, and for five months she had had occasional nausea and symptoms of indigestion. She was well nourished, with firm, thick abdominal wall, and no evidence of free fluid. The laparotomy scar from the operation was firm. To the left of the scar was a hard painless tumor, 3 inches in diameter, apparently developed in the abdominal wall.

Vaginal examination showed an atrophied cervical stump. In the right lateral fornix was a small ovarian cyst the size of a large orange and partly fixed. The left fornix was free. No pain was elicited. The patient insisted on delivery on account of the anticipated marriage of

an adopted daughter. Three weeks later the patient came to the office with alarming symptoms. The nausea had increased to the extent of inability to retain food. The abdomen had become much distended and mildly sensitive. The abdominal wall tumor had changed in contour, had lost its hardness and was tender.

The patient entered the hospital after a week's study and preparation, the abdomen was opened on diagnosis of malignancy. The free abdominal fluid of over three gallons was emptied. The abdominal wall tumor to the left of the incision was seen to be papillomatous in character, involving the parietal peritoneum, the overlying layers and the rectus muscle. A part of the tumor was removed for examination.

Immediately underlying this tumor and densely adhering to it were loops of intestines. The ovarian cyst partly filled the true pelvis and, projecting from the cyst wall to the lateral wall of the pelvis were papillomatous masses. No extended examination of the remaining contents of the abdomen was made on account of the poor condition of the patient. There were, however, no other marked secondary papillomatous deposits. The papillomatous abdominal wall tumor gave evidence of a secondary implant from the papillomatous cyst in the pelvis, this implant taking place in the site of the adherent intestines, the location of the greatest irritation.

A week later the patient was given deep X-ray exposures and up to the present, has received two series of five treatments each. The effect of this treatment has been to decrease the size of the abdominal wall tumor fully two-thirds. The treatment did not decrease the rate of reaccumulation of the ascitic fluid. The fact that the hopeless condition of this patient is unquestionably due to the presence of the conserved ovaries with retrograde changes to a papillomatous malignant growth, brings up the question of at all times conserving adnexa, when apparently healthy, after the removal of the uterus.

In this individual patient undoubtedly they should have been conserved since, at the time of the original operation, she was only 34 years old. The trend of the present day custom is however, to urge ovarian conservation at all times, whether the patient is past the menopause or near this period, except in cases of malignant disease of the uterus or adnexa. We are influenced to a marked degree by the customs and thoughts of our own immediate day. Whether, however, we conserve the ultimate interests of our patients when we preserve the adnexa, about the age of the menopause, at the time of the removal of the uterus, is still a doubtful question with me.

Dr Browne recalls that, less than ten years previously, in the course of a discussion, the question was brought up at a meeting of the

ascitic fluid escaped. Both ovaries were cystic, and each was about five inches in diameter. Covering the cysts were papillomatous growths, adherent to the adjacent structures. The adhesions separated easily. Numerous small papillomata were seen on the bladder, peritoneum of the abdominal wall, and the intestines. After removal of the large growths the uterus was found to contain numerous small fibroids, and was removed by supravaginal hysterectomy. Recovery was uneventful and the patient has been well ever since.

Three reports were made in 1918, one by Dr. John Corcia of New York, one by Dr. Leo S. Schwartz of New York, one by Dr. Herrmann Grad, also of New York, the latter of which I shall mention because of at least one unusual feature. It is reported in the Transactions of the New York Obstetrical Society, session of January 8, 1918 as a case of double papillary carcinoma of the ovaries, united by inflammatory adhesions.

The patient was an unmarried woman of 49 years, admitted to the Woman's Hospital complaining of a metrorrhagia of three months' duration, and of pain in the lower part of the abdomen. Family history negative. Menstruation began at 15, was always regular, moderate in amount, lasting for four or five days with no pain. The last menstruation could not be determined, as flowing had been going on more or less for the last three months. She had had abdominal pain now for several months, worse at night. Heart and lungs were negative. She had lost much weight, although the abdominal enlargement had now been noted for a month or more.

The abdomen was irregularly enlarged to the size of a six or seven months pregnancy. On the right side, on a level with McBurney's point, was a protrusion the size of a fist. The mass was hard in consistency, but tender to the touch. There was dullness on percussion over the entire tumor which did not change with the position of the patient. Bimanual examination was difficult on account of the presence of a resisting hymen. The pressure of a tumor of a soft consistency in the true pelvis was obvious. The cervix of the uterus was raised up and firmly pressed against the os pubis. The fundus of the uterus could not be located. A diagnosis of ovarian cyst and fibroid of the uterus was made and the possibility of malignancy considered.

Operation. The abdomen was opened in the midline below the umbilicus but, on account of the size of the tumor, the incision was enlarged and carried to the left, one inch above the umbilicus. On opening the peritoneal cavity a large amount of serous fluid escaped. The omentum was found adherent to the tumor, as were several coils of small intestines. At one point the wall of the cyst was very thin and,

at this point, a rupture occurred during the manipulation. A large amount of fluid escaped into the peritoneal cavity.

The papillary type of the tumor was now recognized and it was deemed best to clear the pelvis of its contents, attacking the uterus first. Accordingly, the infundibulo-pelvic ligament was cut between clamps and the bleeding points tied. The cervix was now divided and the broad ligament on the opposite side clamped off from below. In this manner the uterus with both ovarian neoplasms was removed in one mass. It was then found that both tumors had fused by an inflammatory adhesion. No other peritoneal implantations were found. Diagnosis of papillary and glandular cystic carcinoma of the ovary was made.

Pathological report, macroscopic. Both tubes are slightly thickened. Both ovaries are changed into large cysts, which were collapsed when received. One cyst shows extensive, very fibrous, yellowish papillations on the inner surface, the other, slightly smaller, ovarian cyst fuses with the first and shows a fairly smooth inner surface. A solid, very fibrous, tumor mass, 8 cm in diameter, was received separately, the uterus measures 7 by 4 by 3 cm, and shows a small submucous myoma. Several sections from papillary cyst and from uterus were taken.

Miscroscopic. The section shows a mucosa of normal type. The tube was densely infiltrated, and edematous musculature. Two sections from the cysts show a variety of epithelial structures penetrating and solid masses of cells with marked optical unrest are not uncommon. Only a few portions of one section show papillations.

Two interesting reports are made for 1922, one by Dr. Frederick Bancroft, of New York Hospital, who had three cases of bilateral tumors of the ovary, one of them a papillary cystadenoma, because they show the tendency of tumors of the ovary to be bilateral, and the necessity, therefore, in certain types of ovarian tumors, to perform a double oophorectomy.

The case was that of a girl of twenty, admitted to New York Hospital, September 18, 1922. The chief complaint was of swelling in the abdomen for a period of four years, but within the last two weeks it had increased rapidly with indefinite pain in the back and abdomen. Menstrual history normal. Occasionally vomits and for these two weeks has suffered from diarrhea.

Physical examination revealed a large, cystic tumor which extended well above the umbilicus. The tumor had a depression in the median line, so that it felt almost as if it were bilateral. It did not move with respiration. There was tympany in the flanks, but none anteriorly. Vaginal examination showed normal sized uterus ante flexed, and no bulging in the lateral fornices.

Double cystic congenital kidney was ruled out by the aid of cystoscopy and fluoroscopy. A

appendicitis was made. She was not operated upon owing to the mild symptoms and the fact that she was pregnant. She was very obese and as she progressed in pregnancy the abdomen enlarged rapidly and a twin pregnancy was suspected.

On March 7, 1924, she was delivered of a female child, stillborn with a sacral spina bifida. The abdomen was much distended after the delivery and a diagnosis of ovarian cyst (right) was made and there were pressure symptoms and respiration was embarrassed. Operation was decided upon and on March 13, 1924, the abdomen was opened by a median incision. A large ovarian cyst (right) was found loosely adherent to the parietal peritoneum, the cyst as large as a foetal head. The adhesions were easily separated the pedicle tied and cut and the stump covered with peritoneum. The appendix was removed. The gall bladder, region stomach, left ovary, tube and uterus appeared to be normal and the abdomen was closed. The cyst was multilocular—showed beginning degeneration. Pathological report (papilloma). She made an uneventful recovery and was discharged from the Hospital in good condition on March 27, 1924.

In August 1924 she complained of shortness of breath and on October 24, 1924 she was taken with influenza and on November 10, 1924 developed a right sided pleurisy. On November 15, 1924 a pint of hemorrhagic fluid was aspirated from right chest. The abdomen at this time was enlarged somewhat, but no fluid could be demonstrated. The abdomen continued to enlarge, respiration became embarrassed

and she again entered the hospital on December 14, 1925.

The face was somewhat edematous. The right chest was dull on percussion and breath sounds could be heard faintly over whole area. The abdomen was enlarged and there was a movable mass in left side, otherwise examination was negative. A left ovarian cyst was diagnosed and operation determined upon. December 2, the abdomen was opened by a left rectus incision and two (2) pints of straw colored fluid was found free in abdominal cavity. A left ovarian cyst the size of a large grape-fruit was found pedicle tied and stump covered with peritoneum and abdomen closed. This cyst contained a gelatinous fluid, was multilocular and pathologic report was Papilloma.

The visceral and parietal peritoneum was studded with nodules which at this time were thought to be carcinoma.

She made a fair operative recovery and was discharged from the Hospital January 15, 1926. After arriving home she grew progressively worse and died suddenly on January 24, 1927.

I report this to show what I did not do in this case, namely to remove at the first operation although it seemed normal the left ovary and tube. I am sure that should I again have a case of ovarian cyst and have any suspicion that it was malignant, no matter what the age of the patient and no matter what the condition of the other ovary, I should at least insist on its removal together with the tube and I am not at all sure but what the uterus should also be removed.

LIGHT AND HEAT IN MEDICINE, SURGERY AND PUBLIC HEALTH

SECOND INTERNATIONAL CONFERENCE, LONDON (ENG.)

An Invitation To All American Doctors

We are asked to invite the attention of all medical men and scientists in the United States to the 2nd International Conference on Light and Heat in Medicine, Surgery and Public Health, which will be held in London (Eng.) from 29th. October to 1st November 1928.

The 1st. International Conference on this subject which was held in London in December of last year proved to be of very great importance. Among those who assisted at the various sessions were such well known English authorities as Prof. Leonard Hill, Sir Henry Gauvain, Prof. E. C. C. Balch, Dr. Elkin P. Cumberbatch, Dr. A. Eldinow, Dr. Kerr Russell and Dr. King Brown. While the foreign specialists who read papers included Prof. Hulschinsky (Berlin) who first discovered the cure of rickets by artificial ultra violet irradiation, Dr. Franz Nagelschmidt (Berlin) and Dr. Jean Saidman (Paris).

An even greater number of prominent medical and scientific authorities will take part this year and it is hoped that all American doctors and scientists who are able to be in England at the time will make a point of attending the Conference. Visits will be made to some representative clinics in order to give those attending the Conference an opportunity of seeing modern methods of utilizing light and heat for therapeutic purposes.

The Conference will take place in the University of London, South Kensington S.W. 7. An Exhibition of the most up-to-date apparatus and accessories for ultra violet, radiant heat and kindred forms of therapy will run concurrently in the Great Hall of the University adjoining the Conference Hall. A special section will be devoted to Vitamins.

Reduced rail fares will be obtainable (within England and Scotland) for those coming to London for the Conference.

For directed information apply to the 'British Journal of Actinotherapy' (17 Featherstone Buildings, High Holborn W.C. 1). Hotel reservations will be made with pleasure for visitors from abroad.

THE HEALTH OF THE MERCHANT MARINES

The oldest function of the United States Public Health Service according to recent information has at no time in the last 129 years been of greater value in keeping the flag on the seas than at present. This comprises the medical aid furnished by the Government through the service to American merchant vessels and for this specific purpose the service was organized under the act of July 16, 1878.

The American merchant marine carried in 1798, 201,562 tons of cargo; it now carries more than 17,000,000 tons annually and is served by nearly 250,000 seamen. The medical relief station now operating in 152 ports of the United States and its insular possessions are the refuge of sick and injured seamen.

During the last year there were 356,746 applications for treatment of physical examination, 1,288,061 hospital days of treatment were given and 632,341 outpatient treatments given. Formerly merchant seamen contributed directly from their wages to the Marine Hospital fund but direct levies were discontinued in 1884 when Congress provided other funds.

A new 250-bed marine hospital is proposed for Cleveland to be built out of funds derived from the sale of the present site which cost the government \$12,000 in 1837 and a portion of which was recently sold for more than a million dollars.

American Gynecological Society as to the advisability of removing the adnexa when doing a hysterectomy in a patient about the menopause age. The opinions expressed were the result of the experience of the operators, yet in spite of the fact that internal ovarian secretions were just as active at the time of that discussion as they are today, we had not had it so constantly before our minds as it is at present.

Four years ago Polak, before the same society, presented a study on the ultimate behavior of the conserved ovaries, as taken from a collection of cases from his own clinic. In this paper, he voiced in every particular my own convictions that, in instances of removal of the uterus, the conservation of the ovaries should not be a routine measure, but that each case should be dealt with individually. I venture to predict that, in the near future, the surgeon will return to his original line of thought, and question the endocrine value of conserved ovaries when, at the time of the menopause, it is necessary to remove the uterus, the basis being that a patient's interests are better considered when she is certainly left free of a possible pelvis discomfort with the attendant nervous condition if the adnexa are removed at the time of the hysterectomy.

The question as to whether these growths are benign or malignant from the beginning, or are originally benign and become malignant is one on which there is wide difference of opinion. Williams says the "growths are derived either from this or that," Nagel points out that *might lead to*, Emrys believes thus and so, Pfannstiel classifies and describes without in any way accounting for anything, Semb divides them into *malignant* and *non-malignant*, without doing much else, Griffiths and Williams place them on the *borderline* between the *malignant* and the *non-malignant*, Cohn describes the *change* from the benign to the malignant, Levi thinks any of them may become malignant, and one opinion is as good as another. Reports are to be found which would seem to confirm any old opinion. In the same way the prognosis is pronounced by one authority as very bad, while another is convinced that it is not at all bad.

Gibbon holds that the results following treatment (surgical) can best be understood by classifying them in groups. In the first definite group, after extirpation of the primary tumors, the metastases entirely disappear in the non-malignant types. This spontaneous retrogression has been reported by several observers. In a second group the tumor recurs locally after extirpation locally, in the form of papillary nodules at the stump, in the wound, or in the peritoneum. In this group recurrences (according to five different observers) have appeared at the site of the tumor or in the peritoneum after 13, 15, 20 and 21 years, and even after

that the patient may survive many years in a fairly satisfactory condition of health.

From all that has been said it would seem that the prognosis depends on many factors: the degree of malignancy of the individual tumor, the skill of the surgeon, the resistance of the individual patient, etc. In any case years may be added to the life of the patient, to say nothing of the comfort of an easy mind, by the removal of these ovarian growths, no matter what the degree of advancement, and no matter about anything and regardless of any conditions whatever, if the life of the patient is the question to be decided.

In a third group the implanted nodules continue and spread over much of the peritoneal surface, causing adhesions between the intestines, the accumulation of large amounts of ascitic fluid and, finally, death from cachexia or intercurrent disease. In the last group the implantations may rapidly or gradually change their type and become malignant, spreading through the abdomen and causing distant metastases and death.

Coming now to individual surgeons (the treatment is invariably surgical) their treatment and results, Dr. Wm. J. Mayo says: "As to papillomatous ovarian cysts, we have had a very high percentage of cures since we have practiced the removal of both ovaries and tubes, and supravaginal hysterectomy. It had formerly been our experience that, when we removed a tumor of one side, a second tumor often formed on the other side, and, later a few cases returned with cancer of the body of the uterus, so that the complete radical operation can be expected to cure a very large percentage of cases."

Dr. A. J. Ochsner (recently deceased) says: "My method consists in removing the cyst, both ovaries, Fallopian tubes, and the uterus, and as much of the broad ligaments as I can without endangering the ureters. The recurrence, in my experience, has always been in the broad ligaments."

Dr. George W. Green (Chicago) who has made a review of the literature finds only 365 cases recorded, six of which he considers doubtful. The first case reported was that of Procharka in 1812. Dr. Green's report is of 1909, but all of the cases reported in this paper are later than that, so that the number would seem to be getting close to 400 by 1927.

CASE REPORT

A woman aged thirty-one came under my care during her first pregnancy which was uneventful and she was delivered on April 9, 1922 of a male child, weight 8 pounds. Delivery by forceps. Cause: Uterine Inertia. The puerperium was normal.

She again became pregnant in 1923 and when 4 months pregnant was confined to bed for a week with pain in lower abdomen right side. She had no temperature, no vomiting and no spasm or rigidity of right rectus muscle, but a diagnosis of mild

ready involved may help to stop the process the two cases to be mentioned one was from surgical service at the Mary Hitchcock Memorial Hospital, and is reported through the courtesy of Dr Percy Bartlett. The other case from the medical service of the hospital

CASE 1 Male age 50 admitted to hospital at 5 30 A. M. October 27 1926 Unable to walk doubled up with intense abdominal pain

H. Entirely negative P. H. General health always of rather nervous high strung temperament. For past several years has had irregular recurring attacks of upper abdominal distress withrosis and dull pain. One year ago had test meal showing moderate hyperchlohydria, X ray of stomach duodenum negative, moderate dental sepsis present. For past six months had been on alkalis, with considerable relief.

I. Three days ago, patient had onset of dull epigastric pain more severe than usual, which had persisted almost constantly up to onset of present acute attack. There had been some relief obtained from alkalis and antispasmodics. Patient arrived home at 3 P. M. having driven by automobile for 120 miles. After the noon meal there was slight epigastric distress, which continued until arriving home several hours later, when he was seized with sudden, intense epigastric pain, became nauseated and vomited.

Was seen a half hour later, morphine administered, and patient brought immediately to hospital. E. A well developed and nourished middle-aged man lying in bed knees drawn up apparently in intense pain vomiting. Anterior abdominal muscles marked spasm, no localization of pain or tenderness at first. After morphine—slight relief more definite localization of tenderness in epigastrium. Pulse 92 small, poor tension. Temperature 97.5. Provisional Diagnosis. Perforated Gastric Ulcer. Immediate operation advised.

Operation. Under ether anesthesia a six inch right rectus incision was made. On opening the peritoneum there was a free escape of blood stained serum which increased on exploration under liver bladder stomach, and duodenum were negative. Head of pancreas was enlarged 2 and nodular. The posterior of the mesocolon showed an extravasation of blood behind it. Incision of this was followed by the escape of a small amount of blood stained serum. No necrosis was seen. A gauze drain was packed down on the head of the pancreas which was not incised. Wound closed around drain. Clinical Course. Immediate reaction was characterized by marked post-operative discomfort with nausea and vomiting and shock. Bloody serous drainage was profuse. For three days gastric lavage was carried out twice daily and patient supported by two hypodermoclyses of saline daily. On fourth day nutrient enemata were started. Urine was of high specific gravity showing albumen and casts no sugar. This improved gradually following an increase of the intake by means of hypodermoclysis. Acetone appeared in urine on 7th day sugar on the 9th—from that time intravenous glucose and insulin were given daily or twice daily in accordance with the report of urinalysis. Blood urea 27.3 mgs blood sugar 160 gms per 100 cc. On the 24th day blood urea 22.9 mgs blood sugar 108 mgs. These estimations were made on blood samples taken after fasting. During this period patient was given intravenously 20 cc of 50% glucose with 8 units of insulin two or three times daily as indicated. Hypodermoclysis was decreased as gastric derangement improved.

The skin about the wound became red and irritated and there was separation of the suture line down to the deep fascia over the upper three-fourths of the wound. This continued to increase for about a month

but with no exposure of viscera, wound edges were held by adhesive for many weeks of convalescence up to January 10 1927 when the skin was reopened over the undermined extremities of the wound which then healed rapidly. At varying intervals from the sixth to the ninth week there were recurring periods of chills and fever from three to five days duration with no changes in appearance of wound, abdomen or in the urinary output. During last two weeks, general condition improved rapidly on full house diet urine negative wound healing well and patient dismissed on 79th day following admission.

The premonitory symptoms in this case are of considerable interest demonstrating the probability of a long standing process terminating in an acute hemorrhagic condition, and supporting the belief that chronic pancreatitis without acute exacerbation is relatively common. The dental sepsis of years duration in the absence of definite gall bladder disease at operation, may be considered as a possible contributory etiological factor. The absence of fat necrosis was due without doubt to the rapidity with which operation followed onset of the condition.

It is generally recognized that permanent pancreatic insufficiency is conspicuously rare in cases of recovery. Yet in this case, with acetone and an elevated blood sugar occurring prior to the administration of glucose and insulin we have evidence of a temporary damaging of the mechanism of the internal secretion. The successful use of glucose and insulin in combating the acetonuria was very definite and interesting in view of its failure in Case 2.

This patient has been dismissed from the hospital almost six months, is working and eating full diet, urinalyses have been entirely negative.

CASE 2 White male age 47. Admitted to the hospital September 26 1926—in a semi-conscious state.

F. H. Negative for diabetes wife and six children living and well.

P. H. Influenza in 1918—never well since that time.

P. I. In the summer of 1923 patient developed excessive thirst, increased appetite and a polyuria. In August, 1923 he had what was termed a stomach upset. At this time he was found to have diabetes. He was in the hospital in September 1923 for 17 days and was treated by dietary measures and insulin. He was discharged with the urine sugar free and the blood sugar normal. He remained more or less on his diet and took insulin for the next three years during which time he had recurring attacks of weakness and vomiting but was fairly well until five days before admission when he discontinued the insulin for three days. He then took an unknown amount and was almost immediately seized with severe upper abdominal pain nausea and vomiting. The pain and vomiting persisted until the day of arrival at the hospital and he had become very drowsy. Prior to admission his abdominal condition was thought to be an intestinal obstruction.

P. E. Showed a well-developed somewhat undernourished man in a semi-conscious state with a marked acetone odor to the breath. The tongue was dry and cracked pulse rapid and weak and temperature subnormal. The abdomen showed slight distention but there was no spasm and only slight tenderness across the upper abdomen. The patient did not complain of pain.

NEW HAMPSHIRE MEDICAL SOCIETY

SOME ASPECTS OF PANCREATITIS*

BY JOHN P. BOWLER, M.D., F.A.C.S., AND H. A. DESBRISAY, M.D.†

PANCREATITIS in its milder form is probably much more common than is generally thought, but the pre-operative diagnosis of such a condition is extremely difficult, and usually impossible. Even the picture attending the sudden, acute, hemorrhagic type is rather variable, and a correct diagnosis is seldom made before the surgeon opens the abdomen.

While we do not feel that we can add anything new to the subject, we think that the two cases, of which we speak, are of interest. As to the etiology, opinions differ and theories abound. Those who believe in the old theory that pancreatitis is due to the regurgitation of bile into the pancreatic ducts have had this theory shaken by the work of Mann and Giordanno, who have shown that pressure sufficient to cause bile to enter the pancreas must be so great as to cause rupture of the ducts. However, the regurgitation of infected bile is a different matter and must be considered as a factor in some cases. Deaver believes that the condition begins as a lymphangitis from a focus of infection in the liver or gall-bladder or both with successive involvement of the lymph-nodes about the cystic and common ducts, of the gastro-hepatic omentum and down to the glands about the head of the pancreas and first portion of the duodenum, and finally into the interlobar and interlobular spaces of the pancreas itself. Experiments have shown the presence of such a communication between the gall-bladder and pancreatic lymphatics. Burden has found that an inflammatory reaction in the common duct is an almost constant finding in cholecystitis, and as the common-duct passes through the head of the pancreas in two-thirds of cases, the latter could be easily infected by contiguity. In 52 of Deaver's cases the head of the pancreas was alone affected. Of 79 of Deaver's cases with a chronic pancreatitis, 91% had biliary infection. It must be remembered that there is also a lymphatic pathway from the ileocaecal region, suggesting the possibility of appendicitis as a cause.

There are also cases, few in number it is true, in which no other intra-abdominal disease than the pancreatitis is manifest. Such cases may well be due to a blood-borne infection, from a focus at a distance. Here may be mentioned a case of the acute hemorrhagic type reported in 1924 by Holden and Moran, where the patient had a frontal sinusitis which developed one week before the onset of abdominal symptoms and at operation there was no pathological process dis-

covered other than in the pancreas. In certain hematogenous infections such as typhoid fever the condition sometimes occurs. Other possible causes may be mentioned in passing, such as pancreatic calculi, ruptured peptic ulcer, arteriosclerosis of the pancreatic vessels, with trauma or severe physical strain added, alcoholism, et cetera.

Symptoms and signs. The clinical picture of pancreatitis is best known in its acute form but there are no points in the clinical history, in the physical examination, or in the laboratory tests upon which reliance can be placed. Of the two cases we shall mention, one was diagnosed on the operating table, and the other at the autopsy table. Subacute attacks may occur as warnings before the storm breaks, or may evidently be overcome spontaneously. It is very common to find the so called chronically thickened pancreas at operation which must be due to the effects of mild inflammatory changes in the past. Mayo Robson believes that some cases of catarrhal jaundice may be due to a mild pancreatitis. The symptoms of acute hemorrhagic pancreatitis may be suggestive of acute gall-bladder disease, perforating peptic ulcer, intestinal obstruction or other conditions, but as we all know, the pain is of a most agonizing, stinging, boring character. There is marked and early shock. The pain is often difficult to localize and is not infrequently on the left side in the renal area, but may localize in the epigastrium within 48 hours. Nausea is a constant feature, and the persistent vomiting often suggests a high intestinal obstruction, but the vomitus is never fecal. Hiccough may be a prominent feature. Jaundice may be seen after 48 to 72 hours.

Physical Examination usually shows no marked distention of the abdomen. Muscular rigidity varies and may be marked or very slight. There is often tenderness over both upper quadrants and not infrequently in the costo-vertebral angle, more on the left. The temperature may be normal or slightly elevated. The leucocyte count is usually normal. The urine may occasionally show sugar. Other tests, except the examination of duodenal contents in the chronic forms for the absence of trypsin, are of little or no value.

As far as treatment goes, the only hope, of course, lies in early operation and drainage. Transfusion at the time of operation may be life saving. In the after care a close check on the urine and blood-sugar is necessary. By the early removal of diseased gall-bladders possibly some cases may be prevented, and long continued drainage of the common duct where the pancreas

*Read at the Annual Meeting at New Castle June 22 1927

†For records and addresses of authors see "This Week's Issue" page 592

due to a continuation of the degenerative process in the pancreas itself

The authors of the paper have indicated the symptoms and physical signs of acute pancreatitis in a painstaking manner but we must all continue to be extremely observant if we wish to be able to make accurate diagnoses in cases of acute pancreatitis

DR FRED B LUND Boston Before the early nineties when Opie made his epoch-making demonstration (by finding at autopsy a stone so located that it blocked the ampulla of Vater and allowed the bile to enter directly from the common duct into the duct of Wirsung) that pancreatitis might be due to the entrance of infected bile into the duct of Wirsung we were very much in the dark about the causation of pancreatitis. We knew about its sudden onset, seriousness, mortality etc. and we knew that if we operated and drained the gangrenous or infected area, that in the course of the convalescence immense amounts of what looked like pancreatic tissue might slough out, so that it appeared as if the patient might have very little pancreas left. After Opie's observation it was ascertained by experiment that the injection of infected bile into the pancreas would produce pancreatitis, and also acids and other chemical substances would do the same. However, acute pancreatitis with necrosis is produced by the necrosis of any portion of pancreatic tissue.

It has been demonstrated by experiment that the pancreatic ferment, pancreatin, is not active until it is activated by a hormone in the intestine. If the duct of Wirsung be drained into the peritoneal cavity in experiments on animals, the animals live a long time, on the other hand if the pancreas from one animal be removed and placed under antiseptic precautions in the abdomen of another, the animal dies with all the symptoms of acute pancreatitis.

Necrotic tissue of the pancreas activates the pancreatic juice, and acute pancreatitis may be caused by anything which causes local necrosis of the pancreas, embolic abscess or a blood clot in one of the pancreatic veins.

Deaver and Sweet have also demonstrated that pancreatitis, especially the subacute variety, may be due to direct extension through the lymphatics from an infected gall-bladder and liver, and I have seen fat necrosis appear in a case of gall stones while the surgeon was waiting for the acute symptoms to quiet down. This can only be due to direct extension by the lymphatics as there were no stones in the common duct.

I have seen a case of acute pancreatitis in a young man of twenty-eight years in which the diagnosis was not made, but the condition was very acute. On opening the abdomen blood escaped as rapidly as it does in a case of extra-uterine pregnancy. Needless to say, the poor fellow did not get well.

The cause of chronic pancreatitis is too extensive to take up in this connection.

DR J W JAMESON Concord Three symptoms which are usually present in cases of acute pancreatitis are—

Exercising pain in the upper abdomen, usually in the epigastrium and radiating through to the back, associated with collapse

Cyanosis

Marked rigidity of the upper abdominal muscles

I should like to report two cases

Mrs M. for several years had suffered with attacks of pain suggesting gall stone colic—and was operated on by me in April 1924 at which time I removed her gall bladder which was enlarged, thickened and contained about eight hundred stones, most of which were about the size of a No. 4 shot. About the 9th day she complained of severe epigastric pain and vomited several times. Her temperature which had been practically normal rose to 104 and two days later to 105 with continuance of the pain, which was controlled only by morphine. There was tenderness in the median line about two inches above the navel and some resistance of the muscles. About ten days later a definite mass the size of a grape fruit was felt above the navel, it was tense, tender and fixed. Under gas and oxygen the mass was opened and about a pint of thick, yellowish brown oily fluid was evacuated. The omentum showed areas of fat necrosis. There was a marked irritation of the skin from the discharge which was profuse but which gradually subsided. The patient developed a parotid abscess about a month following operation but was discharged healed about eight weeks after admission.

I think probably one of the small stones became lodged at the papilla and her acute pancreatitis developed as a result.

Mrs. — 67 for several years slight indigestion—no jaundice. I saw this patient three days after the onset of her illness which was with severe pain located in the upper part of her abdomen. Nausea but no vomiting. She was in severe shock when seen by her physician but responded to treatment. Her pain subsided but did not disappear and required morphine. Bowels moved by enemata and there was considerable distention.

She had tender mass palpable in her lower epigastric region, rigidity of her abdominal muscles—temperature 101 with pulse of 120 slightly increased white count.

A diagnosis of pancreatitis was made and she was operated on. The cavity which contained fully a pint of thick brownish fluid was drained and she made a complete recovery though the wound drained for several months.

A short time before the wound healed a large slough was removed from the tract. Fat necrosis was present on the omentum and peritoneum in this case.

SYPHILIS OF THE CIRCULATORY SYSTEM, WITH ESPECIAL REFERENCE TO ANEURYSM OF THE AORTA (ILLUSTRATED BY MOVING PICTURES)*

BY ORRIN SAGE WIGHTMAN, M.D. †

DR WIGHTMAN presented a Moving Picture Clinic illustrating Syphilis of the Heart and

Presented at the Annual Meeting of the New Hampshire Medical Society

†For record and address of author see "This Week's Issue" page 592

The reflexes were sluggish and the extremities cold. The patient was catheterized and the urine showed sugar 4+, albumen 3+, acetone and hyaline casts. The blood sugar on admission was 47 mg %, the urea nitrogen 75 mg %. The patient was given subcutaneous saline, caffeine, gastric lavage, as well as glucose and insulin intravenously. But death occurred 20 hours after admission, although there was a slight initial response to insulin. He received a total of 325 units of insulin, in spite of which the blood sugar rose to 57 mg % just before death, and the acetonuria persisted. No urine was found in the bladder two hours before death.

The autopsy, performed one and a half hours after death, showed an enlarged somewhat fatty liver but the gall bladder and ducts were normal. The pancreas showed an enlargement and infiltration of the head with dark red blood which had spread down into the mesocolon. There were areas of fat necrosis about the pancreas. The kidneys showed some evidence of a chronic nephritis. The stomach and transverse colon were distended but there was no obstruction. The urinary bladder contained no urine. The microscopic examination bore out the gross findings, the pancreas showing the cell islands in some cases congested with outlines indistinct, in other areas, shrunken and fibrosed. There were hemorrhagic areas in the interlobular spaces, the blood vessels were thickened and the lumen narrowed. Over a large portion of some of the sections, the pancreatic tissue was totally destroyed, only the fibrous tissue framework remaining. Lymphocytic as well as red blood cell infiltration was seen here and there.

The adrenal bodies showed hemorrhagic areas. The kidneys showed swelling of the tubules with hyaline and fatty degeneration. The lungs showed passive congestion.

The outstanding points in this case were —

- 1 The previous history of disturbed pancreatic function producing a diabetes.
- 2 The history of vague abdominal distress over a period of three years possibly due to mild attacks of pancreatitis.
- 3 The history of the acute disturbance at the onset suggested intestinal obstruction.
- 4 The failure to respond to Insulin. The function of the Islands of Langerhans must have been almost totally destroyed. As a result of the shock, the increasing acetonæmia, and the cellular changes throughout the body, as well as in the kidneys, there was finally a total anuria. The cellular depression was too great to respond to treatment.

In Conclusion We have mentioned two cases, one ending in death and one in recovery. In the former case the pancreatic function was destroyed, as seen in the slides shown. In the latter case an early operation was performed before the onset of fat necrosis, and while there was destruction of pancreatic tissue, and some temporary depression of the function of the cell Islands of Langerhans, compensation eventually occurred.

The history of both cases suggests previous attacks of mild pancreatitis. Such disturbances are evidently more common than is usually believed.

DISCUSSION

GEORGE C. WILKINS, M.D., Manchester. *Mr. President*—Different authors divide pancreatitis

into several classifications, such as the acute, hemorrhagic, gangrenous, suppurative, pancreatic apoplexy, catarrhal, subacute, chronic, etc. The various conditions which have brought these classifications are really different manifestations of the same disease. Pancreatitis can be likened to appendicitis in its many phases and degrees of severity. As in appendicitis there are two general classifications, the acute and chronic. In the acute disease there is necrosis and hemorrhage. It has been generally believed that this acute manifestation starts with hemorrhage, but more recent studies have indicated that in all probability necrosis appears first followed immediately by an inflammation and hemorrhage.

As to the cause of acute pancreatitis, this is always due to a chemical or bacterial irritant. The usually recognized chemical irritants are first, bile heavily laden with bile salts, and second, the conversion of trypsinogen to trypsin by enterokinase. Both of these conditions will produce acute pancreatitis. The bacterial origin is from the bile ducts, the duodenum or the lymphatics, and the inflammation is especially serious if the bacillus coli is the agent. In given cases there is much controversy as to the etiological agent and the route by which it reaches the pancreas.

In addition to the etiological theories mentioned by the reader, Archibald has demonstrated that sphincteric action at the ampulla of Vater does occur and can be experimentally produced. Mann and Giordanno have somewhat diminished the value of Archibald's theory by demonstrating that muscle fibers also surround the pancreatic duct. They have also shown that acute pancreatitis can not be experimentally developed by elevation of the pressure within the pancreatic duct unless the pressure went above one thousand millimeters. The normal blood pressure in the ducts is 325 to 350 millimeters and it has never been obtained physiologically over 500 millimeters. Opie's original theory was that plugging of the outlet by stone produced a back pressure causing pancreatitis. Deaver's lymphatic theory seems the most probable, and his theory is supported by Graham. The route of infection is from the portal system through the hepatic lymphatics to the gall-bladder and the pancreas. It is doubtful that pancreatitis can be produced under any conditions by normal bile entering the pancreatic duct. Infection is the foremost etiological factor.

The recovery in the first case cited by the reader, was due to early operation and technically scientific conduct of the case after operation. Lavage of the stomach was very important, but I would like to suggest the advantage of the moderately small gastroduodenal catheter inserted through the nose as being far superior to the twice a day stomach tube washing.

The second case evidently had chronic pancreatitis before sugar appeared, the advent of the sugar showing involvement of the Islands of Langerhans. The subsequent symptoms were

due to a continuation of the degenerative process in the pancreas itself

The authors of the paper have indicated the symptoms and physical signs of acute pancreatitis in a painstaking manner but we must all continue to be extremely observant if we wish to be able to make accurate diagnoses in cases of acute pancreatitis

DR FRED B LUND, Boston Before the early nineties when Opie made his epoch-making demonstration (by finding at autopsy a stone so located that it blocked the ampulla of Vater and allowed the bile to enter directly from the common duct into the duct of Wirsung) that pancreatitis might be due to the entrance of infected bile into the duct of Wirsung we were very much in the dark about the causation of pancreatitis. We knew about its sudden onset seriousness, mortality, etc., and we knew that if we operated and drained the gangrenous or infected area, that in the course of the convalescence immense amounts of what looked like pancreatic tissue might slough out, so that it appeared as if the patient might have very little pancreas left. After Opie's observation it was ascertained by experiment that the injection of infected bile into the pancreas would produce pancreatitis, and also acids and other chemical substances would do the same. However, acute pancreatitis with necrosis is produced by the necrosis of any portion of pancreatic tissue.

It has been demonstrated by experiment that the pancreatic ferment, pancreatin, is not active until it is activated by a hormone in the intestine. If the duct of Wirsung be drained into the peritoneal cavity in experiments on animals, the animals live a long time, on the other hand, if the pancreas from one animal be removed and placed under antiseptic precautions in the abdomen of another, the animal dies with all the symptoms of acute pancreatitis.

Necrotic tissue of the pancreas activates the pancreatic juice, and acute pancreatitis may be caused by anything which causes local necrosis of the pancreas, embolic abscess or a blood clot in one of the pancreatic veins.

Deaver and Sweet have also demonstrated that pancreatitis, especially the subacute variety, may be due to direct extension through the lymphatics from an infected gall-bladder and liver, and I have seen fat necrosis appear in a case of gall stones while the surgeon was waiting for the acute symptoms to quiet down. This can only be due to direct extension by the lymphatics as there were no stones in the common duct.

I have seen a case of acute pancreatitis in a young man of twenty-eight years in which the diagnosis was not made, but the condition was very acute. On opening the abdomen blood escaped as rapidly as it does in a case of extrauterine pregnancy. Needless to say, the poor fellow did not get well.

The cause of chronic pancreatitis is too extensive to take up in this connection.

DR J W JAMESON Concord Three symptoms which are usually present in cases of acute pancreatitis are—

Excruciating pain in the upper abdomen, usually in the epigastrium and radiating through to the back, associated with collapse

Cyanosis

Marked rigidity of the upper abdominal muscles

I should like to report two cases

Mrs M 56 for several years had suffered with attacks of pain suggesting gall stone colic—and was operated on by me in April 1924 at which time I removed her gall bladder which was enlarged thickened and contained about eight hundred stones, most of which were about the size of a No 4 shot. About the 9th day she complained of severe epigastric pain, and vomited several times. Her temperature which had been practically normal rose to 104 and two days later to 105 with continuance of the pain, which was controlled only by morphine. There was tenderness in the median line about two inches above the navel and some resistance of the muscles. About ten days later a definite mass the size of a grape fruit was felt above the navel. It was tense tender and fixed. Under gas and oxygen the mass was opened and about a pint of thick yellowish brown oily fluid was evacuated. The omentum showed areas of fat necrosis. There was a marked irritation of the skin from the discharge which was profuse but which gradually subsided. The patient developed a parotid abscess about a month following operation but was discharged healed about eight weeks after admission.

I think probably one of the small stones became lodged at the papilla and her acute pancreatitis developed as a result.

Mrs — 67 for several years slight indigestion—no jaundice. I saw this patient three days after the onset of her illness which was with severe pain located in the upper part of her abdomen. Nausea but no vomiting. She was in severe shock when seen by her physician but responded to treatment. Her pain subsided but did not disappear and required morphine. Bowels moved by enemata and there was considerable distention.

She had tender mass palpable in her lower epigastric region rigidity of her abdominal muscles—temperature 101, with pulse of 120, slightly increased white count.

A diagnosis of pancreatitis was made and she was operated on the cavity which contained fully a pint of thick, brownish fluid was drained and she made a complete recovery though the wound drained for several months.

A short time before the wound healed a large slough was removed from the tract. Fat necrosis was present on the omentum and peritoneum in this case.

SYPHILIS OF THE CIRCULATORY SYSTEM, WITH ESPECIAL REFERENCE TO ANEURYSM OF THE AORTA (ILLUSTRATED BY MOVING PICTURES)*

BY ORRIN SAGE WIGHTMAN, M.D. †

DR WIGHTMAN presented a Moving Picture Clinic illustrating Syphilis of the Heart and

*Presented at the Annual Meeting of the New Hampshire Medical Society

†For record and address of author see "This Week's Issue" page 592

The reflexes were sluggish and the extremities cold. The patient was catheterized and the urine showed sugar 4+, albumen 3+, acetone, and hyaline casts. The blood sugar on admission was 47 mg % the urea nitrogen 75 mg %. The patient was given subcutaneous saline, caffeine, gastric lavage, as well as glucose and insulin intravenously. But death occurred 20 hours after admission although there was a slight initial response to insulin. He received a total of 325 units of insulin, in spite of which the blood sugar rose to 57 mg % just before death and the acetoneuria persisted. No urine was found in the bladder two hours before death.

The autopsy, performed one and a half hours after death, showed an enlarged, somewhat fatty liver but the gall bladder and ducts were normal. The pancreas showed an enlargement and infiltration of the head with dark red blood which had spread down into the mesocolon. There were areas of fat necrosis about the pancreas. The kidneys showed some evidence of a chronic nephritis. The stomach and transverse colon were distended but there was no obstruction. The urinary bladder contained no urine. The microscopic examination bore out the gross findings, the pancreas showing the cell islands in some cases congested with outlines indistinct, in other areas shrunken and fibrosed. There were hemorrhagic areas in the interlobular spaces, the blood vessels were thickened and the lumen narrowed. Over a large portion of some of the sections, the pancreatic tissue was totally destroyed, only the fibrous tissue framework remaining. Lymphocytic as well as red blood cell infiltration was seen here and there.

The adrenal bodies showed hemorrhagic areas. The kidneys showed swelling of the tubules with hyaline and fatty degeneration. The lungs showed passive congestion.

The outstanding points in this case were —

- 1 The previous history of disturbed pancreatic function producing a diabetes.
- 2 The history of vague abdominal distress over a period of three years possibly due to mild attacks of pancreatitis.
- 3 The history of the acute disturbance at the onset suggested intestinal obstruction.
- 4 The failure to respond to Insulin. The function of the Islands of Langerhans must have been almost totally destroyed. As a result of the shock, the increasing acetonaemia, and the cellular changes throughout the body, as well as in the kidneys, there was finally a total anuria. The cellular depression was too great to respond to treatment.

In Conclusion We have mentioned two cases, one ending in death and one in recovery. In the former case the pancreatic function was destroyed, as seen in the slides shown. In the latter case an early operation was performed before the onset of fat necrosis, and while there was destruction of pancreatic tissue, and some temporary depression of the function of the cell Islands of Langerhans, compensation eventually occurred.

The history of both cases suggests previous attacks of mild pancreatitis. Such disturbances are evidently more common than is usually believed.

DISCUSSION

GEORGE C. WILKINS, M.D., Manchester. *Mr. President*—Different authors divide pancreatitis

into several classifications, such as the acute, hemorrhagic, gangrenous, suppurative, pancreatic apoplexy, catarrhal, subacute, chronic, etc. The various conditions which have brought these classifications are really different manifestations of the same disease. Pancreatitis can be likened to appendicitis in its many phases and degrees of severity. As in appendicitis there are two general classifications, the acute and chronic. In the acute disease there is necrosis and hemorrhage. It has been generally believed that this acute manifestation starts with hemorrhage, but more recent studies have indicated that in all probability necrosis appears first followed immediately by an inflammation and hemorrhage.

As to the cause of acute pancreatitis, this is always due to a chemical or bacterial irritant. The usually recognized chemical irritants are first, bile heavily laden with bile salts, and second, the conversion of trypsinogen to trypsin by enterokinase. Both of these conditions will produce acute pancreatitis. The bacterial origin is from the bile ducts, the duodenum or the lymphatics, and the inflammation is especially serious if the bacillus coli is the agent. In given cases there is much controversy as to the etiological agent and the route by which it reaches the pancreas.

In addition to the etiological theories mentioned by the reader, Archibald has demonstrated that sphincteric action at the ampulla of Vater does occur and can be experimentally produced. Mann and Giordano have somewhat diminished the value of Archibald's theory by demonstrating that muscle fibers also surround the pancreatic duct. They have also shown that acute pancreatitis can not be experimentally developed by elevation of the pressure within the pancreatic duct unless the pressure went above one thousand millimeters. The normal blood pressure in the ducts is 325 to 350 millimeters and it has never been obtained physiologically over 500 millimeters. Opie's original theory was that plugging of the outlet by stone produced a back pressure causing pancreatitis. Deaver's lymphatic theory seems the most probable, and his theory is supported by Graham. The route of infection is from the portal system through the hepatic lymphatics to the gall-bladder and the pancreas. It is doubtful that pancreatitis can be produced under any conditions by normal bile entering the pancreatic duct. Infection is the foremost etiological factor.

The recovery in the first case cited by the reader, was due to early operation and technically scientific conduct of the case after operation. Lavage of the stomach was very important, but I would like to suggest the advantage of the moderately small gastroduodenal catheter inserted through the nose as being far superior to the twice a day stomach tube washing.

The second case evidently had chronic pancreatitis before sugar appeared, the advent of the sugar showing involvement of the Islands of Langerhans. The subsequent symptoms were

uterus which may or may not be accompanied by contractions of the uterus, thus in the case where external bleeding is to take place the patient usually notices sudden severe hemorrhage varying in amount with the amount of separation and the degree of contraction of the uterus.

The symptoms common to both the concealed and the external type of hemorrhage are pain and the usual constitutional signs of hemorrhage such as shortness of breath, pallor and dizziness.

Differential Diagnosis—The differential diagnosis is usually not difficult. It must be differentiated if occurring beyond mid-pregnancy from (1) placenta praevia (2) rupture of the uterus, (which may or may not be accompanied by premature separation of the placenta) and (3) ectopic pregnancy. In placenta praevia vaginal examination shows placenta easily felt through the cervix if there is any dilatation of the cervix bleeding is entirely external. Abdominal examination shows the foetal parts easily mapped out without the usual tender tense feeling which you get in premature separation. In rupture of the uterus abdominal examination shows the fetus outside the uterus. It is usually fairly easy to feel the uterus at one side of the fetus. Ectopic pregnancy past a mid-term is, of course, rare and the differential diagnosis is again the mapping out of the fetus separately from the uterus. The amount of shock in any one of the above three, varies with the severity of the lesion and the amount of hemorrhage.

Treatment—The treatment varies largely with the amount of dilatation of the cervix and the amount of hemorrhage as shown either by external bleeding or the usual symptoms of internal bleeding. Where the cervix is dilated or easily dilatable the best treatment is usually delivery either by forceps or version. In case labor has not begun, the cervix not dilated and especially where the fetus is apparently alive, Caesarean Section is the method of choice. In certain cases with partial separation and small amount of bleeding, expectant treatment may be perfectly satisfactory. Usually, however, the hemorrhage continues to such a degree, until after the delivery of the fetus and placenta, that it is dangerous to the mother, child, or both.

I wish to give briefly the histories, physical examination and treatment, of three cases giving only that portion of the history and examination which refers directly to the condition under consideration.

CASE NUMBER I

Mrs E——— M——— Married Age 33 Patient apparently at or near term

Present Illness—Patient states that she has had irregular pains for about a week. Not severe. Arose on October 16th feeling perfectly well. While getting her husband's breakfast became faint and dizzy. Went to bed and called the doctor. Seen in consultation shortly thereafter. Vaginal pack inserted for profuse bleeding. Patient sent to the hospital showing effects of marked secondary hemorrhage. Taken immediately to delivery room.

Physical Examination—Abdominal examination shows uterus apparently at about term not con-

tracting, somewhat boggy on palpation. Bimanual examination shows cervix about half dilated remaining Breech presentation. Membranes unruptured. Measurements of pelvis entirely normal. Blood pressure 90/55.

Operation—Patient put on operating table in stirrups. Condition so poor that it was necessary to give only a very little ether during delivery. Cervix dilated without difficulty by Harris Method. The legs of fetus brought down fetus delivered without difficulty followed almost immediately by expulsion of the placenta which was covered by a blood clot which indicated that it had separated from the uterus probably at the time of the original hemorrhage. Membranes ruptured some distance from the placenta. Patient was given 1000 c.c. Saline subcutaneously, aseptic ergot subcutaneously and returned to bed.

Subsequent History—Heaters applied around the patient, foot of bed elevated very little hemorrhage after returning to bed. Patient had no rise of temperature. Blood condition rapidly improved. Convalescence entirely uneventful and patient discharged on October 31 recovered, except for slight anemia which still persisted.

CASE NUMBER II

Mrs M——— B——— Married Age 19
Has had one normal delivery on January 17 1925. Menstrual history has always been regular previous to March 16 1924. Has not menstruated since birth of last child nine months ago. Seen first October 22, 1925 at 2 30 P. M. at her home.

Present Illness—Attack of severe pain in lower abdomen at about 2 P. M. followed immediately by a severe hemorrhage faintness shortness of breath and thirst. Sent to the hospital in ambulance.

Physical Examination on arrival at Hospital—Heart weak, regular. Slight contractions of uterus which was enlarged to about 6½ months contractions coming every five to ten minutes. Breech presentation. No tenderness in abdomen. Uterus not boggy. Bimanual examination showed cervix dilated only about 1½ fingers. Membranes unruptured. Placenta not felt. Small amount of fresh blood coming from cervix. Patient's condition somewhat improved over condition when seen at home. Blood pressure 85/50.

History following admission and delivery—Patient continued to bleed a little but never severely. Contractions were irregular after 5 25 P. M., increasing during the night. Delivered by normal breech delivery under primary ether at 11 30 A. M. October 23 1925 with no lacerations. Placenta expelled almost immediately after delivery of child with no excessive amount of flowing. The placenta showed a large blood clot covering almost entire area, beginning to organize. Membranes ruptured at point some distance from the placenta. Clot was from 1" to 1½" in thickness. Foetus at time of delivery about 6½ months. Still birth. Had apparently been dead since original hemorrhage. We were never able to feel either motion or to hear the fetal heart.

Subsequent History—Following the delivery the patient's condition was good except for the secondary anemia. Lochia entirely normal. No rise of temperature. Made an uneventful recovery and was discharged from the hospital on November 3 1925. Since this delivery patient has had another normal child on February 28 1927.

CASE NUMBER III

Mrs R——— L——— Age 26 Third pregnancy

Past History—Past history entirely negative except for two previous normal deliveries. Last delivery June 12 1925. Menstruation has always been regular.

Circulatory System with a special reference to Aortic Aneurysm

His moving pictures illustrated most clearly cases taken from the Strecker Laboratory of the City Hospital, on Welfare Island, New York City

The pathology was demonstrated from cross sections of microscopic slides which by a clever method of enlargement gave the pathologist the chance of pointing out the specific lesions he wished to illustrate

The mode of entry of Syphilis was easily traced by way of the small arterioles in the coronary blood supply. The leucocytes were shown en-masse wherever inflammatory changes were started.

Obliteration of the blood supply was likewise demonstrated in occluded vessels due to the pathological thickening of the vessel walls

Dr Wightman further brought in his patients and simultaneously on the screen showed the patient as outlined in parallel with X-ray pictures. Specimens from these cases were subsequently carried to autopsy and the findings

compared with the known pathology of the disease

Great care was taken to bring out the deep seated character of the disease. Stress was laid upon the need of long and intensive treatment if we were to be successful in effecting an arrest or cure of the disease

DISCUSSION

DR P J McLAUGHLIN, Nashua. I am sure I was very much impressed with the conclusions of Dr Wightman that we should be ever on the alert, must keep our patient ever under observation at all times, keep him treated at all times. The question was asked of a patient, is it ever cured? The thing I want to drive home is this, if this disease enters through the circulatory system, if it becomes definitely seated as a pathological change, you must try to abridge the active part of the disease as well as you can. You can prevent its spread, you probably are able to give definite treatment early. You must not let up. I have not even after the absence of definite symptoms

PREMATURE SEPARATION OF THE PLACENTA WITH HISTORIES OF THREE CASES*

BY ROBERT O. BLOOD, M.D., F.A.C.S.†

PREMATURE separation of the placenta is one of the unfortunate accidents of pregnancy. By premature separation of the placenta we mean its forcible separation from the normal site. It usually occurs in the latter months of pregnancy but may occur at any time and may be either partial or complete. Rigby in 1775 was the first to differentiate this condition from Placenta Praevia with which it is so often confused.

Regarding the etiology, DeLee believes that there are three general groups of causes. *First* Pregnancy toxemias and nephritis. *Second* Disease of the endometrium and ovary. *Third* Traumatism. "Since Winter in 1885 directed attention to the presence of albumin in urine of patients suffering from this accident, Nephritis, has been regarded as its most common cause." Someone has said that albumin can be found in about 70% of the cases. When we consider the individual case it is usually very difficult to attribute the separation to any one of the above mentioned causes as apparently in most of the cases it is difficult to find a definite exciting cause.

Pathological Findings — The pathological findings vary with the individual case. The maternal surface of the placenta is covered to a greater or less extent by a blood clot the size of which indicates very closely the amount of

the separation. The condition of the uterine wall adjacent to the placental site and the site of hemorrhage may show no signs of infiltration from the hemorrhage. In other cases the infiltration is so marked that a rupture of the uterus may be caused at this point. It will be noted also that the point of rupture of the membranes is at some distance from their attachment to the placenta.

Frequency — Authorities differ very greatly regarding the frequency of this accident. Williams, in an article in 1915, stated that "My own experience is that premature separation of the placenta is a more common fact in the causation of ante partum hemorrhage than placenta praevia and in the last 2,000 labors at the Johns Hopkins Hospital the two complications were noted 17 and 14 times respectively."

Holmes of Chicago states that the clinical incidence is somewhere about one case in 500. In 1915 Williams stated that in 3000 deliveries premature separation was noted seventeen times, but in only eight cases was it so severe as to afford a direct indication for terminating the pregnancy.

Various other Hospital Clinics give a ratio of about one case to five and six hundred deliveries.

In my own practice I have had three cases, histories of which I shall give later.

Symptoms — The symptoms vary somewhat, but usually show the following — More or less acute pain either on one side or the other of the

*Read at the annual meeting of the New Hampshire Medical Society on June 22 and 23 1917.

†For record and address of author see This Week's Issue page 592.

mother and baby have done well. The placenta in this case also showed areas of necrosis.

GEORGE A. TREDICK, M.D. Portsmouth. I have very little to say. I think the paper has been well covered. The discussion has been very well taken care of by Dr. Scribner. I think one of the essential points is the diagnosis and the early decision of what the treatment should be.

I. G. ANTHOINE, M.D. Nashua.—I would like to report a case. A stormy Sunday morning, the stormiest of the season. I was called out about 3 o'clock. Found patient was very pale

could not have been paler. It would not have been safe to take her to the hospital, so I had a physician nearby come to give her ether. At first, I thought I could apply the forceps but did a version not expecting to get a living child. Child was asphyxiated. Showered cold water on it and got the child to gasp. Both the child and the mother lived.

DR. R. O. BLOOD, Concord. I just want to say that if you fail to make a diagnosis and give treatment early you are going to lose both mother and child.

OBSERVATIONS OF PRESENT DAY APPLICATION OF BLOOD TRANSFUSION

BY HOMER H. MARKS, M.D.

YOU will note that the subject of my remarks is Observations of Present Day Application of Blood Transfusion.

Let it be clearly understood that I do not pose as a pioneer in this field, neither have I had a large personal experience with the procedure. Much of my time during the six weeks spent in New York last winter was devoted to the study of Blood Transfusion in all its phases, and most of the material for this paper was obtained at that time.

Any proven therapeutic measure having a wide range of usefulness, fairly simple in its performance, many times spectacular, or even dramatic in its results, often prolonging, many times saving life and frequently the only possible means of successfully combating a desperate situation commonly used in all large medical centers but rarely employed in small communities or among the medical profession generally, except perhaps as a last resort, emergency measure seems to me to deserve serious consideration and discussion as to the reasons for this neglect.

It would seem then that the question of blood transfusion occupies rather a unique position in the medical field today.

The history of blood transfusion is very interesting but time allows only the briefest outline.

The practice is centuries old and is mentioned in the earliest writings of mankind.

The first authentic case on record is that of Pope Innocence VIII who was operated upon in 1492. The experiment cost the lives of three young men and failed to save the Pope.

From that time until the first part of the 17th century, it was described and practiced as a method of prolonging life by several prominent physicians.

By the middle of that period, it had come to occupy an established place in surgery, but

as death so frequently resulted, in France the procedure was forbidden.

From that time until the beginning of the present century many abortive attempts were made to revive transfusion and much clever and ingenious apparatus was designed from time to time but no great success resulted.

With the discovery by Lansteiner and Shatlock in 1900 of the existence of iso-agglutinin in the blood of man the secrets for the failure of all those brilliant men of former times was definitely proven. It took however, more than ten years to work out and classify the four blood groups which are the basis of transfusion as employed today.

This work was accomplished by Jansky and Moss who however worked independently of each other.

There quickly followed several different operative techniques. Crile was the first to successfully anastomose the vein and artery by means of a special canula.

In 1913 Linderman demonstrated by a syringe-canula method, that blood could be successfully passed from one to another provided the interval between the withdrawal and introduction was sufficiently short as to permit no change in the physiological or chemical character of the blood.

Next came Ungers two way stop cork apparatus, and then the Lewisohn sodium-citrate method, which permitted blood to remain in a receptacle for quite a period of time, so that it could even be transported some distance before being used.

Both methods proved immediately practical and popular. About this time the Kimpton-Brown paraffined tube was developed in Boston and is still used there to some extent.

In 1917 the surgical staff of the U. S. Army made an exhaustive survey of the blood transfusion problem. They rejected the Crile-Carrel methods, as impractical both requiring too much time and the delicate skill of master surgeons.

Present Illness —Has not menstruated since last child. First seen on October 12, 1926. At that time there was slight nausea and vomiting. Examination showed uterus enlarged about three months size. Felt motion about October 15, 1926. Patient had no swelling, blood pressure normal throughout pregnancy.

Physical Examination —March 7 1927. Abdomen uterus enlarged to about size of term, contracting irregularly, no tender areas.

Reflexes normal. Blood pressure 120/70.

History of Labor —Slight irregular pains beginning at 6 A. M. pains increased in severity and frequency. At 8 50 A. M. patient had sudden severe bloody discharge followed by usual symptoms of hemorrhage, shortness of breath, pallor and dizziness. Vaginal examination showed cervix fully dilated, membranes unruptured. Apparently bleeding came from around membranes. Placenta could not be felt. Patient given ether prepared for immediate delivery. Membranes ruptured at 9 A. M. The baby delivered by low forceps without lacerations. Placenta delivered without difficulty at 9 20 A. M. No marked hemorrhage after delivery of the child. On delivery of placenta there was a formed blood clot covering about $\frac{1}{2}$ of the maternal surface. Examination of the placenta also shows that the rupture of the membranes was at a point some distance from the placenta.

Subsequent History —Patient's condition fair after delivery. Improved rapidly and made an uneventful recovery with no elevation of temperature during time in hospital and was discharged on March 19th in excellent condition. Condition of baby at time of delivery good. Baby also had an uneventful stay in the hospital.

In conclusion I wish to emphasize the point that in dealing with ante partum hemorrhage we must always bear in mind premature separation of the placenta as a relatively common cause of hemorrhage and make a differential diagnosis between this condition and (1) placenta praevia (2) rupture of the uterus and (3) ectopic pregnancy. This is important because of the necessary difference in treatment. If the diagnosis is made early especially in the case of premature separation during labor, it is often possible to save both the mother and child by hastening the delivery as in case three.

Three cases, reports of which are given, vary somewhat as to their histories and treatment. They are all in multipara. In case 1 the hemorrhage followed sudden pain and was very severe. Delivery saved the mother's life with stillbirth. Case 2 the history of onset practically the same as in case 1. Method of treatment quite different. This patient was treated by expectant treatment with a good result as far as mother went but again a stillbirth. Case 3 where the separation occurred during actual labor at hospital with the cervix dilated. Rapid delivery saved both the mother and child.

DISCUSSION

FREDERIC P. SCRIBNER, M.D., Manchester. As Dr. Blood has stated premature separation of the placenta, causing as it does the so called accidental hemorrhage in contradistinction to the unavoidable hemorrhage of placenta praevia is a very dangerous complication of pregnancy, as nearly all the children and a great many of the

mothers die. Goodell reports a maternal mortality of 50.9% and a foetal mortality of 94.4%. The prognosis for the mother is more favorable when the flow of blood is external, as the condition is more quickly recognized and proper treatment instituted. In this form the shock to the mother is not so great for the uterus does not become distended. In the concealed form there is far more danger and here the maternal mortality is high. As a rule in these cases the constitution of the patient is feeble and diseased, which contributes to a large extent to the high mortality. The nearer we are to the completion of the second stage, and the more readily the cervix can be dilated so as to insure a rapid delivery, the better the outlook. The reason for the exceedingly high fetal mortality is probably explained by the fact that when blood collects between the placenta and the uterus, the fetal part of the placenta is torn and the child dies from hemorrhage, while other causes of fetal death are prematurity and asphyxiation from interference with the function of the placenta. As to treatment many of these cases can be handled expectantly, but I believe this depends entirely on the amount of hemorrhage, and the symptoms the patient presents. In the presence of large severe hemorrhage there are two indications: (1) to secure tonic and continuous uterine contraction, and (2) the emptying of the uterus as rapidly as is consistent with the safety of the mother. The first indication can be obtained by rupturing the membranes, massage and compressions of the uterus, and hypodermic injections of ergot or pituitrin. The speedy delivery by rapid cervical dilation, if it is dilatable, and the use of forceps or version. If it doesn't seem that the cervix can be easily dilated then do a Caesarean section. In my own practice I have seen three of these cases, the first one several years ago, which Dr. Burpee has already reported to this society. This case was a multipara who was sent into the hospital in a dying condition due to concealed hemorrhage. We did a rapid delivery and transfused the mother afterward to no avail. In a similar case, now, I should transfuse both before and after delivery. The second case was in a primipara, a former nurse, who was in a pre-eclamptic state, and had been under rigid treatment for this condition for about three months. At about the eighth month she had a sudden flow of blood, without any pain. She came to the hospital where it was decided to treat her expectantly as the hemorrhage had stopped. From the time of the hemorrhage she ceased to feel any motion. In about a week she delivered herself of a dead fetus under gas oxygen analgesia, perfectly normal, about one-fourth of the placenta was found to be necrotic. The third case is one I now have in the hospital who was practically at full term when she started flowing without pain, but again in this case, as the hemorrhage was slight, we treated her expectantly and in two days she delivered herself of a living baby. Both

to and the Bellevue Hospital both report unusual results, provided the exsanguineous method is employed before much toxin has been absorbed. The operation should be repeated every 48 hours as in septic cases.

What surgeon has not had a seemingly clean and beautiful piece of work develop into a desperate nerve-racking situation. A simple appendix perhaps suddenly becoming complicated with subphrenic abscess requiring of course a secondary operation with doubtful and stormy convalescence. Here no other agent can take the place of blood transfusion, and no patient should be denied its use when it is available.

The obstetrician frequently sees cases where blood transfusion would be a real sheet anchor. Post partum hemorrhages, placenta previa, ectopic pregnancies are common examples.

Some of the bad malnutrition cases in infants can be saved by transfusion.

Abortions accompanied either by hemorrhage, sepsis or both, and in that most dreaded condition puerperal septicemia where the streptococcus viridans is the usual offender and when it is present prepare for a real fight. Heroic supportive measures combined with large frequent repeated doses of antistreptococcic serum in my hands have given fair results, but when one recalls some of those cases where from day to day the blood could be seen becoming paler and paler as it flowed out through the needle when the serum was administered, one cannot help but wonder how many might have been saved by blood transfusion intelligently administered.

Dr Stetson reports having treated more than 100 cases of septicemia with better than 50% recoveries. In one instance he gave a total of 5600 cc of blood, withdrawing 1200 cc.

Except in the cases which were practically moribund when first seen, the most frequent cause of death was either pneumonia or meningitis which usually occurred after apparent recovery from the primary disease. What other procedure offers such gratifying results?

In hemorrhage of the new born, blood transfusion is said to be practically a specific. Stetson reports a case where an infant three weeks old breathing in gasps about 6 times to the minute was in less than half an hour, made a rosy-cheeked child with good pulse and a lusty cry and is now a strong robust boy of 7.

The general practitioner sees many of the cases already mentioned as well as practically all the different anemias.

In the pernicious type life is prolonged and symptoms relieved sometimes for years. Here transfusion is indicated when the hemoglobin gets down to 40, or below or when distressing symptoms arise, at least 1000 cc of blood should be given, and as a rule does not need to be repeated for a long time. Experience proves that no other agent offers the same benefit. And, if in addition the high protein diet of Minot combined with large doses of dilute hydrochloric

acid is employed, the results are still more gratifying.

In leukemia Hodgkins' and Banti's disease only temporary help can be expected.

In hemophilia blood transfusion is a specific although the results are not permanent.

Gas poisoning cases have been successfully treated by large exsanguineous transfusions. None of these have come under my observation. At the Bellevue transfusion has been successfully employed in cases of typhoid fever, for both toxic and hemorrhagic conditions, also in lobar pneumonia gastric and duodenal ulcers, erysipelas acute arthritis, prelitis and encephalitis.

T B cases seemingly hopeless, have been given a new lease of life by transfusion, resistance increased and the general condition brought to a point where the disease was overcome.

From this brief study and analysis, the following conclusions may safely be drawn:

1 Direct W B T is a safe and fairly simple measure.

2 Blood Typing and grouping is absolutely essential to success.

3 That Blood Transfusion should no longer be considered solely as an emergency measure, but is a therapeutic agent having a wide field of usefulness.

4 That at least one man in each community should be equipped to perform the operation, and that physicians should differentiate their cases and make use of his skill.

My plea is this—make use of Whole B T as a routine therapeutic measure, and do not employ it simply as a preliminary gesture to the undertaker's summons.

I desire at this time to pay a special tribute to Dr Rufus E Stetson, who is today probably the leading haematologist in New York City, one of the most courteous, likeable and helpful men I have ever chanced to meet. When I was in New York last winter, he allowed me to use his laboratory for blood analysis, made it possible for me to be a witness or assistant in nearly every transfusion which he performed while I was in the city. He turned over his own, as well as the records of the Bellevue Hospital and New York Eye and Ear Infirmary for my use.

Such contacts with big men make one proud of one's profession and compensate somewhat for the many trials and unpleasant things that are encountered in the practice of medicine.

Sometimes I wonder if we small fellows are as helpful and charitable to each other as we should be. Are we not too much hampered by petty jealousies and trivial personalities? Do we always work together in proper harmony and accord?

The day of individualism in medicine has passed. The group idea is succeeding it.

Recent advances along lines of physiological and chemical medicine have revolutionized the diagnosis and treatment of many conditions. The pathologist and laboratory man is an abso-

Substitutes for blood, failed to fulfill the requirements. Transfusion with preserved red cells, while useful, required too delicate a laboratory technique, the Linderman method took too much apparatus, the Unger method seemed too complicated, and also required a skilled operator. The citrate method was finally adopted as being the most practical and was extensively used during the war, many lives being saved as a result.

Every war has developed some outstanding medical achievement, and in the last great war, blood transfusion would seem to occupy first place.

There has been much discussion as to the relative value of citrated vs whole blood transfusion, the consensus of opinion however greatly favors whole blood as being a safer method.

It has been conclusively demonstrated that severe reactions occur from the uses of citrated blood in nearly 50% of the cases, and death has been noted. The reactions are probably due to addition of some foreign chemical to the blood, even normal salt solution produces some poisons in both the plasma and the serum.

The modified syringe-cannula method of Linderman, as modified by Stetson, seems to me to be the method of choice today. It is quick, safe, simple and flexible, absolutely under perfect control at all times, suited to all situation from infancy to old age, as much or little blood may be given as conditions seem to warrant. The procedure may be halted at any time to observe effect and then resumed, without any break in the technique. No complicated apparatus is required and the blood is out of its natural channel but a few seconds.

Three things are necessary for its success. First, perfect instruments. Second, accurate knowledge of the technique and third, practice. Two assistants, one trained in withdrawal of blood from donor, one untrained for washing syringes, are desirable but not essential.

In emergencies a skilled operator can do the work alone. Special cannulae and three or four 20 cc. Record syringes, four basins of normal salt solution, are all the apparatus required.

A thorough knowledge of typing and grouping of the blood, however, is absolutely necessary in every case, even in emergency it is not safe to use the blood from one's nearest relatives.

Stetson reports a case of an extreme emergency where he took blood from a mother to be used for her daughter, and although they closely resembled each other in every respect, a fatal reaction occurred after 60 cc of blood was transfused. Typing done a few hours later revealed two entirely different groups.

To be prepared for every emergency, a relatively large number of healthy donors, representing all four blood groups, who have been previously checked for syphilis and tuberculosis, asthma, and malaria should be available, and

as good sized fees are paid to donors there is no great difficulty in securing them in any good sized community.

Preferably it should be a person between the ages of 20 and 40, weighing not less than 150 pounds. Such a donor can easily spare from 1000 to 1500 cc of blood, and will make up the loss in from 8 to 10 weeks. It is not advisable to use the same donor until a period of at least 6 months has elapsed.

With these developments and refinements in technique, both in the laboratory and the operative procedures has come the gradual broadening of the field in which blood transfusion has proved to be of value.

An analysis of 1000 cases taken from the records of the Bellevue Hospital indicates that it is oftenest of value in surgical conditions.

In cases of shock or hemorrhage and shock combined, it is positively the best known therapeutic agent. Gun shot wounds, fractured skull, compound fractures, and violent traumatism are all common examples of conditions where it may be successfully employed.

In the preparation of cases for operation, such as obstructive jaundice, where clotting time is much retarded by the absorption of bile salts, one or two transfusions will bring the clotting time of the blood down from say 40 minutes to about 6, thus converting a very poor surgical risk into a perfectly good one.

At the Bellevue they have a large number of empyema cases among children who come for the most part from poor families living under poor hygienic conditions. Their resistance is very low. In these cases blood transfusion has given such brilliant results that it is now used as a regular routine measure.

In severe and chronic infections such as osteomyelitis an entirely different situation presents, the infective agent is usually the staphylococcus a true bacteremia being present. Here as in all septic conditions, the exsanguineous method is employed. After giving perhaps two transfusions to correct existing anemia at the next about one-third of the amount that is intended to be given is first withdrawn, the idea being to get rid of a certain amount of toxin and bacteria, so that the dilution of the remaining volume will be so much the greater. In these bad cases transfusion is done every 48 hours until the blood cultures are negative. Frequently from 8 to 12 transfusions are necessary for a cure. It would seem almost useless to undertake transfusion in any septic case unless prepared to follow through to a finish.

At the New York Eye and Ear Infirmary transfusion is oftenest employed after nasal and tonsil operations where hemorrhage occurs.

The most striking results however have been obtained in cases of mastoiditis, complicated by jugular and sinus thrombosis. In these cases repeated transfusions have given recoveries of over 65% which is truly a remarkable showing.

In cases of severe burns Dr. Roberts of Toron-

to and the Bellevue Hospital both report unusual results, provided the exsanguineous method is employed before much toxin has been absorbed. The operation should be repeated every 48 hours as in septic cases

What surgeon has not had a seemingly clean and beautiful piece of work develop into a desperate nerve-racking situation. A simple appendix perhaps suddenly becoming complicated with subphrenic abscess requiring of course a secondary operation with doubtful and stormy convalescence. Here no other agent can take the place of blood transfusion, and no patient should be denied its use when it is available.

The obstetrician frequently sees cases where blood transfusion would be a real sheet anchor. Post partum hemorrhages, placenta previa, ectopic pregnancies are common examples.

Some of the bad malnutrition cases in infants can be saved by transfusion.

Abortions accompanied either by hemorrhage, sepsis or both, and in that most dreaded condition puerperal septicemia where the streptococcus viridans is the usual offender and when it is present prepare for a real fight. Heroic supportive measures combined with large frequently repeated doses of antistreptococcal serum in my hands have given fair results, but when one recalls some of those cases where from day to day the blood could be seen becoming paler and paler as it flowed out through the needle when the serum was administered, one cannot help but wonder how many might have been saved by blood transfusion intelligently administered.

Dr Stetson reports having treated more than 100 cases of septicemia with better than 50% recoveries. In one instance he gave a total of 5600 cc of blood, withdrawing 1200 cc.

Except in the cases which were practically moribund when first seen, the most frequent cause of death was either pneumonia or meningitis which usually occurred after apparent recovery from the primary disease. What other procedure offers such gratifying results?

In hemorrhage of the new born, blood transfusion is said to be practically a specific. Stetson reports a case where an infant three weeks old breathing in gasps about 6 times to the minute was in less than half an hour, made a rosy-cheeked child with good pulse and a lusty cry, and is now a strong robust boy of 7.

The general practitioner sees many of the cases already mentioned, as well as practically all the different anemias.

In the pernicious type life is prolonged and symptoms relieved sometimes for years. Here transfusion is indicated when the hemoglobin gets down to 40, or below, or when distressing symptoms arise, at least 1000 cc of blood should be given, and as a rule does not need to be repeated for a long time. Experience proves that no other agent offers the same benefit. And, if in addition the high protein diet of Minot combined with large doses of dilute hydrochloric

acid is employed, the results are still more gratifying.

In leukemia Hodgkins' and Banti's disease only transitory help can be expected.

In hemophilia, blood transfusion is a specific although the results are not permanent.

Gas poisoning cases have been successfully treated by large exsanguineous transfusions. None of these have come under my observation. At the Bellevue transfusion has been successfully employed in cases of typhoid fever, for both toxic and hemorrhagic conditions, also in lobar pneumonia, gastric and duodenal ulcers, erysipelas, acute arthritis, peritonitis and encephalitis.

T B cases seemingly hopeless, have been given a new lease of life by transfusion, resistance increased and the general condition brought to a point where the disease was overcome.

From this brief study and analysis, the following conclusions may safely be drawn:

1 Direct W B T is a safe and fairly simple measure.

2 Blood Typing and grouping is absolutely essential to success.

3 That Blood Transfusion should no longer be considered solely as an emergency measure, but is a therapeutic agent having a wide field of usefulness.

4 That at least one man in each community should be equipped to perform the operation, and that physicians should differentiate their cases and make use of his skill.

My plea is this—make use of Whole B T as a routine therapeutic measure, and do not employ it simply as a preliminary gesture to the undertaker's summons.

I desire at this time to pay a special tribute to Dr Rufus E Stetson, who is today probably the leading haematologist in New York City, one of the most courteous, likeable and helpful men I have ever chanced to meet. When I was in New York last winter, he allowed me to use his laboratory for blood analysis, made it possible for me to be a witness or assistant in nearly every transfusion which he performed while I was in the city. He turned over his own, as well as the records of the Bellevue Hospital and New York Eye and Ear Infirmary for my use.

Such contacts with big men make one proud of one's profession and compensate somewhat for the many trials and unpleasant things that are encountered in the practice of medicine.

Sometimes I wonder if we small fellows are as helpful and charitable to each other as we should be. Are we not too much hampered by petty jealousies and trivial personalities? Do we always work together in proper harmony and accord?

The day of individualism in medicine has passed. The group idea is succeeding it.

Recent advances along lines of physiological and chemical medicine have revolutionized the diagnosis and treatment of many conditions. The pathologist and laboratory man is an abso-

lute necessity The specialist, as well, must frequently be consulted before a rational, sound and conclusive diagnosis can be made of a patient's ailments and an intelligent treatment carried out

Should we not then cultivate a better spirit of loyalty one for the other, and thus by a closer cooperation better serve the public with much more comfort and satisfaction to ourselves

BIBLIOGRAPHY

- Rufus E Stetson Dec 1921 Paper Hudson County Medical Society
Rufus E Stetson American Journal Medical Sciences Oct 1924
L J Unger Journal American Medical Association
B M Benhelm Journal American Medical Association
Keene Surgery Vol 6
Hospital Records—Bellevue Hospital
Hospital Records—New York Eye and Ear
Hospital Records—New York Hospital

DISCUSSION

JOHN F HOLMES, M D, F A C S, Manchester Dr Marks' introduction is highly commendable, a leaven which will be very helpful to the Society and if he had said nothing more his paper would be a contribution of great value

His observations of the present day application of blood transfusion were made at the fountain head, namely in New York City We are indeed fortunate in having a member of our Society sufficiently interested to make such observations and with the ability and the disposition to bring to us a concise, unbiased presentation of the facts It is one of the best papers on blood transfusion that I have ever had the pleasure of listening to and I am in full accord with Dr Marks' observations

I will not mention the methods of blood transfusion except to agree with Dr Marks that the whole blood method is preferable Blood transfusion is not a cure all but it has a wide field of usefulness which is not generally known and a wide range of application which is even less generally appreciated For instance in combating infectious processes by transfusion it is usually desirable to give relatively small doses, frequently repeated, hemorrhagic disease of the newborn usually requires only one transfusion, but should be a fairly large one, pernicious anemia requires massive transfusions, the treatment

of burns requires still another application of the measure—the so termed exsanguination transfusion It is desirable to use the same reasoning in the application of blood transfusion as is used in any other surgical or therapeutic measure We must strive to assist nature in overcoming disease Resistance to disease is made in part at least through the medium of the blood A patient with a 50% blood is like an army only half equipped Relatively speaking a patient with 35% hemoglobin when raised to 70% hemoglobin has doubled power to overcome disease It is this common sense, logic and understanding that points the way to the great field of usefulness for blood transfusion There are immunity possibilities and certain specific reactions and stimulations that are known to occur in certain instances following blood transfusions, but the great field of application for blood transfusion is in supplementing the blood depleted patients so that they may be better equipped to overcome the pathological or bacteriological process with which they are afflicted

From this view point one can readily see that blood transfusion should be applied according to the need of the patient It should be applied when that need is evident and not as a last resort

A glance through the wards of any general hospital will show many patients anemic, depleted, this is particularly true of cases of prolonged infections such as osteomyelitis, bronchopneumonia, tuberculosis, mastoid disease, furunculosis, etc Most of these cases recover spontaneously, but, the ones that do not seem to be getting along well, will usually be greatly benefited by blood transfusion—in fact the results are often surprisingly satisfactory, this is particularly true of children It is in this great field of possibilities that blood transfusion is often given little or no consideration

There is a prevailing idea that blood transfusion is a procedure of last resort and that if one transfusion does not cure it is futile to further transfuse These are ghosts of the past dissipated by the present day application of blood transfusion so fairly and ably set forth by Dr Marks I heartily commend and endorse his most excellent paper

THE ANNUAL MEETING OF THE NEW HAMPSHIRE STATE MEDICAL SOCIETY

The annual meeting of the New Hampshire State Medical Society will take place at the Carpenter Hotel, Manchester, N H May 15 and 16 1928 The Manchester members of the State Medical Society have been delegated a committee of arrangements The committee is as follows

General Chairman, Dr A J Pltman, President of the Manchester Medical Association

Location—Dr Geo C Wilkins chairman Dr A S Merrill Dr J O Gagnon Dr F P Scribner, Dr J J Powers Dr J B Larochele, Dr J N Fri borg

Program—Dr W A Thompson chairman Dr H S Pattee Dr T L Togus Dr W T Crosby Dr B P Burpee Dr W J Russell, Dr Geo F Dwinell,

Dr Geo M Watson, Dr J Deltch Dr Ezra Jones Dr Maurice Watson

Reception—Dr D C Norton, chairman, Dr H A Streeter, Dr J F Robinson Dr Zatae L Straw, Dr Z A Lavoie Dr G F Sheehan, Dr E D Milville

Banquet—Dr M P Badger, chairman Dr C O Coburn, Dr W A Bartlett, Dr D J Sullivan, Dr P Bergeron Dr J S Bragg, Dr B E Sanborn, Dr G E Hoffses, Dr Robert Flanders

Entertainment and Transportation—Dr Geo V Fiske, chairman

Exhibition—Dr D W Parker chairman Dr C E Dunbar, Dr H W N Bennett, Dr H E Powers, Dr Bruce Snow

Finance—Dr E J Brown, chairman Dr Emdon Fritz, Dr Damase Caron

Publicity—Dr J F Holmes, chairman Dr F N Rogers, Dr M H Towle

OFFICERS

The officers of the State Society are Dr Emery Fitch, Claremont, N H President Dr J J Cobb, Berlin, N H, Vice-President Dr D E Sullivan, Concord N H, Sec Treasurer

The Councillors and the years in which their terms expire are Clifton S Abbott Belknap County 1928 George W Weymouth Grafton 1928 A A Pratte Cheshire 1929 Emery M Fitch Sullivan 1929 Henry H Amsden Merrimack 1930 George C Wilkins Hillsborough 1930 Abram W Mitchell, Rockingham, 1931 Harry O Chesley, Strafford 1931 H H Marks Coos 1932 F E Clow Carroll 1932

The Trustees and the years in which their terms expire are Thomas W Luce Portsmouth 1928 Alpha H. Harriman Laconia, 1929 Ira J Prouty, Keene 1930

The House of Delegates Speaker Fred E Clow Wolfeboro Vice-Speaker Elmer H Carleton Hanover

HOUSE OF DELEGATES

The President of the Society, ex-officio
The Vice-President of the Society, ex-officio
The Secretary Treasurer of the Society ex-officio
Rockingham County—Samuel T Ladd, Portsmouth
Thomas W Luce Portsmouth
Merrimack County—Harold J Connor Concord
Thomas P Dudley, Concord William P Clough New London

Cheshire County—George D Emerson, Fitzwilliam
Frank Dinsmoor Keene

Grafton County—G A. Weaver Bradford Vt
A. W Burnham Lebanon F P Lord Hanover

Sullivan County—Howard A. Hanaford Newport
Henry C Sanders Jr, Claremont.

Hillsborough County—D G Smith Nashua F P Scribner Manchester A L Wallace Nashua H O Smith Hudson J F Holmes Manchester

Belknap County—R W Robinson Laconia Charles H. Harmon Meredith

Carroll County—Fred E Clow Wolfeboro B Frank Horne Conway

Strafford County—J C Lawlor Dover D L Stokes Rochester

Coos County—R E Wilder Whitefield Homer H Marks Berlin

HOUSE OF DELEGATES

MONDAY MAY 14 7 30 P M

Hotel Carpenter

ORDER OF BUSINESS

Subject to Approval of the House

- 1 Call to Order
- 2 Roll Call
- 3 Minutes of last meeting
- 4 Remarks by the Speaker
- 5 Appointment and Selection of Committees
- 6 Reports of Officers
- 7 Reports of Standing and Special Committees
- 8 New Business
- 9 Unfinished Business
- 10 Report of Committee on Nominations (First business of second day)
- 11 Election of Officers
- 12 Unfinished Business
- 13 Adjournment

The Ladies Entertainment Committee extends to the wives of the physicians a most cordial invitation to visit Manchester during the meeting

Every member is requested to register and receive a badge before entering the General Assembly Hall

Ample provisions will be made for these purposes. Please present your membership certificate when registering

The maximum time consumed by essayists should not exceed twenty minutes This time limit, however, does not apply to invited guests It is suggested that the salient features of papers be presented within this time reserving the complete elaboration for publication in the JOURNAL Discussions will be limited to five minutes for each speaker

On arising to discuss a paper, the speaker will please announce his name plainly and then walk forward to the platform so that the audience and the stenographer may plainly hear what is said

Discussion of papers is open to all members and guests of the Society It is not limited to those named on the program

All meetings will be called to order promptly at the hour stated

The Woman's Auxiliary to the New Hampshire Medical Society will hold its Executive Board meeting and its business sessions on Tuesday and Wednesday May 15 and 16 The Hillsborough County Auxiliary will entertain the ladies at a card party at the Manchester Country Club Tuesday afternoon Wednesday noon there will be a luncheon for Auxiliary members and other visiting ladies A bulletin containing this program in detail will be sent to each Auxiliary member on May 1st

TUESDAY EVENING AT 7 O'CLOCK

THE BANQUET

Dr Robert H Brooks Anniversary Chairman

SPEAKERS

Emery M Fitch M D President of the New Hampshire Medical Society

Huntley N Spaulding Governor

Mr Walter Bucklin Boston Mass

Rt Rev John T Dallas

Morris Fishbein M D Chicago Editor of the *Journal of the American Medical Association* Subject *Fads and Quackery in Medicine*

During the evening there will be music by the orchestra and a male quartet

GENERAL MEETING

TUESDAY MAY 15, 10 A. M

Call to order by the President Emery M Fitch

Invocation the Rev Stoddard Lane

Address of welcome by the Mayor the Hon Arthur E Moreau

Report of Committee on Arrangements Arthur J Pitman

Introduction of visiting Delegates

Introduction of members fifty years in practice

Latent Tuberculosis in Children and Its Relation to the Campaign for the Prevention of the Disease Robert B Kerr Manchester Discussion Benjamin P Burpee Manchester Stillman G Davis Nashua *Myiasis with report of case* Henry C Sanders Jr., Claremont. Discussion Burton D Thorpe Newport

Pelvic Outlet Contraction in Pregnancy a Case Report, illustrated Cleon W Colby Exeter Discussion Harry O Chesley Dover Donald C McLachlan Portsmouth

TUESDAY MAY 15 2 P M

The General Practitioner of Medicine and His Relation to Surgery Joseph J Cobb Berlin Discussion David W Parker Manchester From the viewpoint of the Surgeon Specialist Homer H Marks Berlin

From the viewpoint of the Physician and Surgeon
The Early Diagnosis and Prognosis of Carcinoma of the Uterine Cervix Henry Schmitz, Chicago Discussion James B Woodman Franklin, John H Holmes, Manchester

Treatment of Uterine Carcinoma George C Wilkins, Manchester Discussion Howard N Kingsford, Hanover, David W Parker, Manchester

WEDNESDAY, MAY 16, 10 A M

The Other Side of Country Practice Ralph W Tuttle, Alton Discussion Fred E Clow, Wolfeboro, Abram W Mitchell, Epping

Toric Hepatitis with Splenomegaly Following Pregnancy John Pollard Bowler, Hanover, and Rolf C Syvertsen, B S, Department of Histology Dartmouth Medical School Discussion Fred E Clow, Wolfeboro, Benjamin P Burpee, Manchester

Fibroid Tumors of the Uterus James W Jameson, Concord Discussion John F Gile, Hanover Eugene B Eastman, Portsmouth

WEDNESDAY, MAY 16, 2 P M

The President's Address Emery M Fitch, Claremont.

A Remedy for Erysipelas Joseph C Tappan, Derry Discussion Henry W N Bennett, Manchester, George C Wilkins, Manchester

Socialization of Medical Practice Morris Fishbein, Chicago, Editor of the *Journal of the American Medical Association* Discussion William E Reed, Nashua Clarence E Butterfield, Concord

Report of House of Delegates

Report of Trustees

Installation of Officers

Let every member realize he will learn something through attendance at these meetings and arrange his business so as to be present

LIST OF EXHIBITORS

Abbott Laboratories, Pharmaceuticals
Nellie Bartlett, Spencer Corsets

Ciba Company, Pharmaceuticals
J Emory Clapp, Electro Therapeutics
Otis Clapp & Son, Inc, Pharmaceutical Specialties
Warren E Collins, with E F Mahady Co., Metabolism Apparatus

Cote Bros, Food Products

L A. Crossett Co, Orthopedic Shoes

Eastern Dairies, Inc, Ice Cream and Creamery Products

Mrs Alida Fontaine, Surgical Belts

H P Hood & Sons, Inc, Dairy Products

Horlick's Malted Milk Corp, Malted Milk and Food
Lederle Antitoxin Labs, Pharmaceuticals and Antitoxins

E F Mahady Co Surgical and Scientific Instruments

Malcolm MacLean Co, X Ray and Physiotherapy Equipment and Accessories

Manchester Supply Co, Sanitary Equipment

Massachusetts Limb and Brace Co, Artificial Legs
Mellin's Food Co, Mellin's Food for Infants and Invalids

Merck & Co, Pharmaceuticals
Merrell Soule Co Inc, Klim and Borden's Malted Milk

J J Moreau & Son Hardware Products

National Biscuit Co, Food Products

The Chas H Phillips Chemical Co, Milk of Magnesia

Piper McIntire Co, Planos and Victrolas

Pitman Moore Co, Pharmaceuticals

Public Service Co of New Hampshire, Electrical Equipment.

G S Stoddard & Co, Inc, Pharmaceuticals
Surgeons & Physicians Supply Co, Surgical and Medical Supplies

Tailby Nason Co, Pharmaceuticals

The Upjohn Co Pharmaceuticals

John B Varick Co, X Ray Photographic Supplies
Victor X Ray Corp, X Ray and Electro Therapeutics

Burroughs Wellcome & Co, Pharmaceuticals

HILLSBOROUGH COUNTY MEDICAL SOCIETY

The 23rd annual meeting of the Hillsborough County Medical Society was held at the Country Club, Nashua, N H, Tuesday, April the 3rd, 1928

Committees were appointed to draw up resolutions on the death of three members Drs A F Mulvanity and I G Anthoine of Nashua N H, and Dr E C Tremblay of Manchester N H

Dr Emery Fitch of Claremont, N H, President of the New Hampshire Medical Society, presented the problem of Medical Defense in New Hampshire and it was unanimously voted to indorse the Maine plan of medical defense. It is expected that some definite action will be taken at the next annual meeting of the State Society, to be held at Manchester, N H, May 15 and 16, 1928

Dr Wm P Murphy of Boston gave a talk on Pernicious Anemia and the results obtained by the use of liver and liver extract. This treatment of pernicious anemia is revolutionary. Dr Murphy's paper was very helpful. It was enthusiastically received and discussed at length.

Dr Seth substituting for Dr Arthur R. Kimpton of Boston Mass, read a paper on 'Purpura Hemorrhagica'. He emphasized the difficulty in, and importance of a definite diagnosis. Blood transfusion appears to be the palliative and supportive measures, splenectomy the curative measure. His talk was well presented and interesting.

The president of the Society, Dr G S Hazzard of Hollis presided.

The following officers were elected for the ensuing year President, Dr W A Thompson, Manchester Secretary Treasurer, Dr D G Smith, Nashua, Executive committee Dr C O Coburn, Manchester Dr C E Dunbar, Manchester, Dr P J McLaughlin Nashua Dr F B Foster, Peterborough Dr H E Thompson Nashua Auditor, Dr M A Sweeney Nashua Delegates to the House of Delegates of the New Hampshire Medical Society were elected as follows Dr Frederick P Scribner, Manchester Dr H O Smith Hudson, Dr D G Smith, Nashua, Dr A. L. Wallace, Nashua, and Dr John F Holmes Manchester Alternate delegates were Dr Charles Cutler Peterborough Dr J Franklin Robinson Manchester Dr Oscar Burns, Milford, Dr Benjamin Sanborn, Manchester, and Dr O Maynard, Nashua

Hillsborough County includes the cities of Manchester and Nashua and is the largest County in the state. It has 145 members.

Much credit is due the secretary, Dr Deering Smith of Nashua for arranging one of the most interesting meetings in the history of Hillsborough County Medical Society.

WOMAN'S AUXILIARY

The Woman's Auxiliary to the Hillsborough County Medical Society held its third annual meeting at the Nashua Country Club Nashua N H Tuesday, April the 3rd, 1928

Mrs John F Holmes of Manchester N H, the president, presided. A report of the semiannual

meeting held at the Manchester Country Club, Manchester N H, in October, 1927, was read by the secretary, Mrs J Franklin Robinson of Manchester, N H

Miss Anna C Lockerby, Superintendent of the Memorial Hospital, Nashua, N H, gave a splendid talk on The Physically Fit Child in Regard to Diet Dr Emery M Fitch of Claremont, N H President of the New Hampshire Medical Society, spoke along general lines, complimenting the Woman's Auxiliary upon its progress

Lunch was served at the Club, after which the members attended the meeting of the Hillsborough County Medical Society

A nominating committee was appointed consisting of Mrs F E Kittredge of Nashua Mrs H A Thompson of Nashua, the vice president, who asked to be placed on the nominating committee because it would be impossible for her to serve the Auxiliary as President and Mrs W A. Thompson of Manchester They brought in the following list of officers for the ensuing year, who were duly elected President, Mrs B G Moran Vice President Mrs E A Jones Manchester Secretary and Treasurer Mrs Deering Smith, Nashua Auditor, Mrs C H Babbitt, Nashua Directors, Mrs Oscar Burns Milford Mrs Robert Flanders, Manchester Mrs F P Scribner, Manchester

The meeting was well attended, interesting and marked by a spirit of friendliness The Woman's Auxiliary appears to meet with general approval

MEETING OF THE ROCKINGHAM COUNTY MEDICAL ASSOCIATION

Rockingham County Medical Association held its regular meeting at the Portsmouth Hospital Portsmouth N H, March 15 1928 In the morning a well prepared and interesting dry clinic was presented as follows

MORNING SESSION

Dr T W Luce 3 cases of stone in the bladder
Dr E B Eastman 3 cases of fractured femur in children

Dr D C MacLachlan 2 cases of pernicious anemia.

Dr C W Hannaford 2 cases of fractured spine

Dr C F McGill diabete

Dr H L Taylor 1 case of placenta accreta

Dr Wendell Clare 1 case of acute intestinal obstruction due to strangulation of an omentocoele with a knuckle of intestine in an inguinal hernia

Dr Hazzard 3 cases of acute appendicitis

Dr Ladd 3 cases of semi common fractures

Dr Johnson 1 case of syphilis

Dr Tredick, 3 cases fractured skulls

Dr Greeley duodenal ulcer

A splendid luncheon was served at the hospital and in the afternoon two papers of unusual merit were read

Focal Infection from viewpoint of Dentist Dr F A. Feuerhan Portsmouth.

Focal Infection, from viewpoint of X Ray Dr H O Chesley Dover

These papers proved of such merit that they have been referred to the New Hampshire Surgical Club Dr Wendell P Clare, president of Rockingham County presided

Courtesy of John G W Knowlton Secretary Treasurer

CONFERENCE OF COUNTY SECRETARIES

A conference of County Secretaries was held at the Eagle Hotel Concord N H, March 27, 1928 Those present were Dr Homer Marks Berlin, Secretary of Coos County Dr Deering Smith of Nashua, Secretary Hillsborough County Dr A. A. Pratte of Keene Secretary of Cheshire County Dr H C Sanders Claremont Secretary Sullivan County Dr John G W Knowlton Exeter, Secretary Rockingham County Dr Emery Fitch, Claremont, President N H State Medical Society, Dr D C Sullivan, Concord, Secretary N H State Medical Society Dr John F Holmes, Manchester New Hampshire Correspondent

In the course of conference representatives of an insurance company submitted a policy and plan for medical defense The President, Emery Fitch, urged all secretaries of County medical societies to become delegates to the State Convention hoping that in that way to strength the executive board of the State organization and to have available at the State meeting the information and material which the County secretaries have at their disposal The matter of arrangements and attendance at County meetings was freely discussed and many valuable and interesting points brought out The secretaries were urged to secure any particularly good scientific matter presented in their County, news items such as births, deaths removals appointments hospital construction, establishment of health centers, etc and forward them to the State Correspondent to be submitted to the NEW ENGLAND JOURNAL OF MEDICINE for publication thereby stimulating a greater interest in things medical

NEW HAMPSHIRE MEDICAL SOCIETY

COMMITTEE OF CLINICAL MEETING

A committee of three members of the House of Delegates was appointed last June to consider the matter of a Clinical Meeting of the State Society and to report at the annual meeting of 1928 A partial report for the members and for members of the House of Delegates seems desirable in order that men may attend the 1928 session with their ideas somewhat crystallized

From a list of all the members of the State Society the names of nearly all nonresident fellows were dropped and a few retired and honorary members were not considered for the poll Four hundred fifty reply post cards were sent asking for certain data on which a committee report could be based The response has been very gratifying some men, in addition to the return post card have written personal letters

Replies to the questions

If a Clinical Meeting of the State Society is held I will _____ will not _____ be interested in attending'

Yes _____ 133

No _____ 30

Non-committal _____ 4

I think it would _____ would not _____ be a desirable thing to do

Yes _____ 163

Non-committal _____ 4

My preference as to lectures would be

1 A variety covering medicine surgery and obstetrics

Replies _____ 92

2	Obstetrics, gynecology and pediatrics	
	Replies	24
3	Fractures, dislocations, infections	
	Replies	33
4	New methods in diagnosis and treatment	
	Replies	100

FRED E. CLOW, M.D.
For the Committee

RECENT DEATHS

Dr George H. Hawley of Centre Barnstead died in 1927

Dr Fred Chamberlain Tobey of Wolfeboro died October 10, 1927

SHEA—DR AUGUSTUS W. SHEA, a general surgeon who made his home in Nashua, N. H., died April 10 at the Charlesgate Hospital, Cambridge. He was 62.

He was born in Nashua, August 9, 1865, son of Daniel A. and Catherine (McDonald) Shea. He was educated in the public schools there and was graduated from the high school in 1883. He received his M.D. degree from the University of Vermont in 1887, and took postgraduate courses in New York and Philadelphia.

June 25, 1902, he married Lucy E. Kelly of Brooklyn, N. Y. He had begun general practice in 1887. In 1888-1889 he was city physician and member of the Board of Health. Since 1895 he had been a surgeon for the Boston & Maine Railroad.

CORRESPONDENCE

State of New Hampshire
State Board of Health
Charles Duncan, M.D., Secretary
Concord

April 6, 1928

Editor NEW ENGLAND JOURNAL OF MEDICINE

I read with particular interest in your issue of March 22nd the articles on "poison liquor" by Drs. Bigelow and Hunt and Mr. Lythgoe, my interest being based upon the fact that certain investigations and observations of my own (admittedly considerably less extensive) as chemist for the New Hampshire Board of Health had long since satisfied me concerning the fallacy involved—and which fallacy it cannot be doubted will continue to be entertained by the public and even by many physicians, notwithstanding the pronouncements by health administrators, chemists and pharmacologists.

Early in 1924, the writer presented a paper on this subject before the New England Health Institute at Boston, this apparently having been the first time that this revolutionary view of the subject had ever been given presentation to the general public. Next day the local papers gave this address rather prominent notice,—apparently however not so much because what was said was a statement of what could be accepted as the truth as that it constituted a unique and diverting exhibition of the mistaken lucubrations of a backwoods scientist.

Later, an article in this connection along popular lines entitled "The Poison Rum Bugaboo" and published in the *New York Sunday Times*, won me considerable mention of a sort by facetiously inclined news paragraphers, most of whom quite evidently looked upon the thought that any one should declare

bootleg liquor as in general no more poisonous than the pre-prohibition kind, as being an excellent joke and nothing more.

I am venturing to enclose pages from the report of the New Hampshire Board of Health for 1924, a scanning of which, if you care to take the trouble, will indicate that precisely similar views were expressed by the writer at that time as are voiced in the recent issue of the *JOURNAL* cited "The world do move!"

Very truly yours
CHAS. D. HOWARD,
Chief of Division

NEWS ITEM

Dr. H. W. Bennett, a prominent physician of Manchester, N. H., was recently appointed to the Dermatological department of the Massachusetts General Hospital. Dr. Bennett will continue his practice here in Manchester, making daily trips to Boston. For the past year Dr. Bennett has been a volunteer assistant in the department, of which Dr. E. Lawrence Oliver of Boston was recently placed in charge. Dr. Bennett is a hard working student of medicine. The recent recognition of his ability carries with it added responsibility. He has the confidence and good wishes of the profession.

Matsis, Demetrius N., a graduate of Tufts College Medical School, 1925, located at 215A Main St., Nashua, N. H.

MEMBERSHIP CHANGES

Hilton, George L., a graduate of the College of Physicians & Surgeons, Baltimore, Md., 1902, located in Milford, N. H.

Matsis, Demetrius N., a graduate of Tufts College Medical School, 1925, located at 215A Main St., Nashua, N. H.

Marsh, Luther A., 215A Main Street, Nashua, N. H.
Provost, Adolphe J., 1103 Elm Street, Manchester, N. H.

Harissis, John T., 696 Elm Street, Manchester, N. H.

Siske, Harry E., Glencliff, N. H.

McKinley, Leslie E., No. Haverhill, Mass.

Murch, Carroll R., 226 Main St., Nashua, N. H.

REMOVAL

Dr. Henry L. Clow has moved from Wolfeboro to the State Hospital in Hathorne, Massachusetts.

Dr. John Osterhout of Ravenna, Neb., has removed to 255½ E. 6th St., No., Portland, Oregon.

DROPPED FROM MEMBERSHIP

Edson M. Abbott of Rochester, N. H.

MEDICAL COUNCIL OF THE UNITED STATES VETERANS BUREAU

The Medical Council of the United States Veterans Bureau held its eighth conference in Washington April 11-12, discussing standardization of procedure and treatment in hospitals, rating for disabilities from active pulmonary tuberculosis, home treatment for the tuberculous patient, the need for additional diagnostic centers and methods for obtaining and retaining a high type of medical officers.

Two new members were added to the Council—Dr. Dean Lewis, Surgeon in Chief of the Johns Hopkins Hospital, and Dr. John B. Walker, of New York Consulting Surgeon to the Pennsylvania Railroad.

MEDICAL PROGRESS

PROGRESS IN PEDIATRICS

BY JOHN LOVETT MORSE, M.D.⁶

SO few articles of real importance have appeared in the field of Pediatrics since the last report that it hardly seems worth while to abstract them in detail. It may perhaps be profitable, however, to call attention to some of the problems which are now of especial interest to pediatricists, to discuss briefly some of the present tendencies in pediatrics and to try to determine the real value of certain new methods of treatment.

Both foreign and American pediatric journals are filled with articles on the feeding of infants, discussing long intervals and short intervals, concentrated foods and dilute foods, the beneficial and dangerous effects of fats, sugars and starches, the advantages and disadvantages of pasteurization and boiling, and so on *ad infinitum* or *ad nauseam*. If it were not for the references to acidified milks, it would be hard to tell whether the articles were written today or twenty or thirty years ago. There were even then, however, articles on buttermilk. Of some interest in this connection is Greene's observation that the addition of inorganic acids to infants' foods causes the appearance of casts and sometimes of red blood cells in the urine while organic acids and alkalies do not (*American Jour Dis Children*, 1928, 35, 38). Much attention is being paid and much experimental work done as to the relative importance of proteins and dehydration in the etiology of "protein and dehydration" fevers. It seems to have escaped notice, however, that clinically, if the proteins are kept low and dilute foods given, fever will not develop and it will not be necessary therefore, to name it or treat it. Incidentally it has recently been rediscovered that high external temperatures, especially if the air is stagnant and humid, will elevate the temperature of babies and make them sick.

The feeding of children and of all but the youngest infants is dictated now, as it has been for the last decade, by enthusiastic and well-meaning, but, unfortunately, only half-educated, badly informed and lacking in judgment, dietitians and nurses instead of by pediatricists and physicians. Parents listen to them not to their doctors. They read the articles in the *Ladies' Home Journal* and *Modern Priscilla*, not those in the *American Journal of Diseases of Children*, the *Journal of the American Medical Association* or even in the *NEW ENGLAND MEDICAL JOURNAL*. Unfortunately, it sometimes seems as if the doctors also read these lay journals instead of the medical journals and are more influenced by advertisements and fashion than by reason and common sense. The most

interesting piece of work in this connection is that of Cowgill and his associates (*J. A. M. A.* 1927, 89, 1770 and 1930) who found that, if adequate supplementary foods are employed, satisfactory growth and development takes place when as much as 90% of the caloric intake is contained in whole grain cereals. The results were but little less satisfactory when some of the milled cereal products were used. They also found that it was possible to get equally good results with the whole grain cereals when the rest of the diet was made up of certain easily obtainable food products other than milk. It seems evident from their results that there is no justification for the present hue and cry against cereals for children and that milk is not so essential for children as is generally believed.

Nothing especially new has appeared in the field of nutrition and its diseases. Somewhat less cod liver oil is probably being given today than a couple of years ago. The Great American Fraud that is, the ultraviolet lamp, which owes the start of its present popularity to rickets is flourishing like the green bay tree. It is useless to prove that it can do no good in most of the conditions for which it is employed or that it may do harm. The public and apparently a considerable proportion of the medical profession is gullible and evidently likes to be gulled. The ultraviolet lamp is, of course, of great value in the treatment of rickets and spasmophilia and helpful to a certain extent in that of a few other diseases like low calcium asthma and tuberculosis of the lymph nodes. It is a great pity that it is being so abused, because it will eventually fall into undeserved disrepute. A very good summary of what is known as to the physiologic effects of radiation is that of Laurens in the January, 1928, number of *Physiological Reviews*.

Slow but steady progress is being made in the field of the acute contagious diseases. There is much discussion all over the world as to the specificity and value of the Dick test in scarlet fever and the value of the serum treatment. On the whole the trend of opinion is favorable. With more concentrated sera, the reactions are becoming less troublesome. With further improvements in the reinoculated toxin, it is not improbable that in the not far distant future it will be both feasible and advisable to immunize children against scarlet fever in the same way as is now being done against diphtheria. It is possible, moreover, that reinoculated diphtheria toxin may replace the toxin antitoxin mixture now in use. The evidence in favor of Tunnicliffe's organism being the cause of measles is increasing and it is not unlikely that a curative

serum for measles may be developed within the next few years. Occasional cases of acute diffuse nonsuppurative encephalomyelitis, which have developed after vaccination, have been reported from all over the world. It is not clear, however, what the connection is between these cases and vaccination or whether there is any at all, except that one happens to occur after the other. The serum treatment of erysipelas seems to be proving effective and to be a distinct advance over the older methods. It is too early to form any opinion as to whether the streptococcus recently described as the cause of rheumatism really is or not. It is impossible, therefore, even to hazard a guess as to whether the serum which is now being tried in the treatment of rheumatism is likely to prove of benefit or not.

Much is being written in all languages about tuberculosis in early life, the importance of and methods of early diagnosis, the various forms of the tuberculin test, glandular tuberculosis, "hilum" tuberculosis, sunlight and ultraviolet irradiation in treatment, etc., etc. It is all old stuff, however, and gets us nowhere. The only new thing which shows any evidence of being of importance is the work which the French are doing with Calmette's method of vaccination. The results thus far are certainly encouraging, but it is too soon to draw any positive conclusions as to whether this method should be generally adopted or not.

Nothing of importance has appeared about the heart and its diseases in childhood, although many pages have been printed about it. Nothing epoch making has been discovered as to the anemias of early life, but much work is being done, especially in this country, and it looks as if we were on the verge of getting a better conception of these obscure conditions and what to do for them. It seems likely, moreover, that the studies which are now being carried on may soon show something as to when the spleen should be removed and when it should not be in the not very uncommon cases of severe anemia associated with enlargement of the spleen, with or without hemorrhages, in early life. Incidentally, it has been shown very definitely that the administration of liver and its extracts does not either prevent or cure anemia in childhood. It has also been shown again that the yolk of egg and prunes contain more iron than carrots and the "leafy" vegetables, including spinach.

Although not much has been written on this subject, clinicians and pathologists are both interested in the pneumonias of infancy. The evidence is accumulating that pathologic lobar pneumonia is really rare at this age and that, in many instances, what is clinically lobar pneumonia is really bronchopneumonia. It is also becoming evident that in many cases which are clinically bronchopneumonia, the stress of the disease falls on the interstitial tissue of the lungs, that is, the condition is really an inter-

stitial pneumonia or a pneumonitis. This fact explains the indefiniteness of the physical signs, the irregularity of the course, the high mortality and the tendency to chronicity. An interesting paper in this connection is that of Heimann and Cohen (*Archives of Pediatrics*, 1927, 44, 677). In a few instances albolene and similar oils, which had been used in the nose, have been found in the lungs of babies dead of bronchitis and bronchopneumonia. The question has been raised as to whether the oil was not the cause of the trouble in the lungs. A more likely explanation is that these oils were put in the noses of babies so near dead that the pharyngeal reflex was dulled and, on this account, the oil entered the lungs. At any rate, the evidence that the oil caused the trouble in the lungs is not sufficient to justify the giving up of a very useful procedure. Incidentally, if a few drops of oil in the nose can cause disease in the lungs, how can the injection of lipiodol for taking Roentgenograms be justified?

The discussion as to the etiology of "pyelitis" is still going on, but the solution of the problem seems no nearer than it did a few years ago. Nothing of importance has been learned as to the medical treatment. Everyone agrees, however, that, when there is constantly pus in the urine or there are frequent recurrences, the patient should be thoroughly studied by cystoscopy, catheterization of the ureters and pyelography, as in this way some organic and remediable cause may be found.

Chronic degenerative lesions of the kidney due to toxic absorption from some local focus of infection and characterized by large amounts of albumin, with few or no renal elements in the sediment, are now being more generally separated from the chronic inflammatory or interstitial diseases of the kidneys. The term "nephrosis" is applied to them. It is important to recognize them, because, if they are recognized and the focus of infection found and removed, the prognosis is much better in them than in the other forms.

Very little of importance has appeared as to the diseases of the nervous system. The most practical paper is that of Neal and Jackson (*J A M A*, 1927, 88, 1299) in which they emphasize the lack of symptoms pointing to the nervous system in meningitis in early infancy. At this age meningitis should be suspected in every acute case with high temperature in which there are no characteristic symptoms or physical signs of some other disease. The treatment of epilepsy in childhood by the production of a ketosis is still being studied and promises more than any method thus far tried. At present, however, it should not be used outside of hospitals nor by those not thoroughly familiar with the chemistry of metabolism.

Case Records

of the

Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 14111

THREE MONTHS' PALPITATION AT TWENTY

MEDICAL DEPARTMENT

First admission An American schoolboy of twenty entered Nov. 26 complaining of palpitation of three months' duration.

Six years before admission he had tonsillitis, treated with diphtheria serum. Soon afterwards he had an attack of severe lancinating precordial pain and marked palpitation. He remained in bed five weeks, and afterwards had precordial pain and palpitation on the slightest exertion. He gradually got over these symptoms but still had edema of the ankles whenever he was on his feet long. Three weeks before admission a fit of laughter brought on another attack of palpitation, the first for six years. This lasted until admission, with some dyspnea on exertion but no pain.

He gave a history of tonsillitis every winter for three years following the first attack. He had never been vigorous. A year before admission for three months he had nosebleed on getting up in the morning. For the past month he had had some discomfort after eating, relieved by belching of gas. He passed large amounts of urine once or twice at night. In ten months his weight had fallen from 138 to 127 pounds.

Clinical examination showed a boy apparently entirely well except for flushed cheeks and slight orthopnea. Apex impulse of the heart in the sixth space in the anterior axillary line, localized and heaving, with a presystolic thrill. Rate 80. Rhythm irregular. Left border of dullness 10 centimeters to the left of midsternum, 2 centimeters outside the midclavicular line, right border 3 centimeters, supracardiac dullness 4. A systolic murmur, almost constantly musical, loudest at the apex, heard also at the base. Second sound doubled at the base, possibly an early diastolic. Pulses and arteries normal. Blood pressure 150/50. An electrocardiogram showed auricular fibrillation, rate 75, left axis deviation. The rest of the examination was negative.

Urine not remarkable. 10,700 to 16,000 leukocytes, polymorphonuclears 63 per cent, hemoglobin 70 per cent, reds 5,500,000, slight

achromia. Wassermann negative. Non-protein nitrogen 38 milligrams.

X-ray showed marked prominence of the left auricle, also considerable increase in size of the shadow of the left ventricle downward and to the left. (See illustration.) The pulsations of the various chambers of the heart were seen. There was no limitation of respiratory movement and no evidence of adhesive pericarditis.

Temperature 96.1 to 98.5° P 60-100.

The chief complaint was palpitation. November 27 there was absolute irregularity. Dr. White noted Broadbent's sign and slight paradoxical pulse and advised quinidine, with tonsillectomy later. The heart was found to shift. On quinidine the rhythm became regular. December 9 the patient was discharged.

History of interval Soon after he left the hospital his tonsils were removed. He felt well, worked as a house painter for a year and a half and had no symptoms. He then sold typewriters, but had to give this up after four months on account of dyspnea on carrying the machines up stairs. He then drove a bus for five months with no symptoms except dyspnea on exertion. Six months before his readmission he had sudden headache, backache and general aching of muscles lasting four days. On returning to work he had sudden rapid irregular palpitation of the heart with shortness of breath. A hypodermic was followed within half an hour by disappearance of the symptoms. After this the only symptom was weakness, which increased. Two months before his readmission he went to bed. His left arm was paralyzed for four days, and did not regain normal power for a month or more. He was up and about again with no symptoms except weakness. Two months before readmission he had abdominal distention. Six weeks before readmission he began to have pain in his back, much worse immediately after urination. Flexion of the left thigh beyond a certain angle was painful. He began to have frequency and polyuria. The urine was reddish brown. About the same time red spots appeared on his legs. Although he was in bed his feet swelled in the daytime, the swelling going down at night. A month before readmission he began to have dry cough and slight fever. After a week he began to have yellow sputum. During the weeks before readmission he lost much weight and went downhill rapidly.

Second admission, February 25, three years and two months after his discharge.

Clinical examination showed an emaciated, pale, sickly looking boy propped up in bed. Skin dry and wasted, lying loose over the subcutaneous tissues. A few purpuric spots on the shins, not blanching with pressure. Chest thin, with sunken interspaces. Over the lower left scapula an area of dullness with increased tactile fremitus, whisper and breath sounds. Lungs otherwise clear except for scattered râles at the

serum for measles may be developed within the next few years. Occasional cases of acute diffuse nonsuppurative encephalomyelitis, which have developed after vaccination, have been reported from all over the world. It is not clear, however, what the connection is between these cases and vaccination or whether there is any at all, except that one happens to occur after the other. The serum treatment of erysipelas seems to be proving effective and to be a distinct advance over the older methods. It is too early to form any opinion as to whether the streptococcus recently described as the cause of rheumatism really is or not. It is impossible, therefore, even to hazard a guess as to whether the serum which is now being tried in the treatment of rheumatism is likely to prove of benefit or not.

Much is being written in all languages about tuberculosis in early life, the importance of and methods of early diagnosis, the various forms of the tuberculin test, glandular tuberculosis, "hilum" tuberculosis, sunlight and ultraviolet irradiation in treatment, etc., etc. It is all old stuff, however, and gets us nowhere. The only new thing which shows any evidence of being of importance is the work which the French are doing with Calmette's method of vaccination. The results thus far are certainly encouraging, but it is too soon to draw any positive conclusions as to whether this method should be generally adopted or not.

Nothing of importance has appeared about the heart and its diseases in childhood, although many pages have been printed about it. Nothing epoch making has been discovered as to the anemias of early life, but much work is being done, especially in this country, and it looks as if we were on the verge of getting a better conception of these obscure conditions and what to do for them. It seems likely, moreover, that the studies which are now being carried on may soon show something as to when the spleen should be removed and when it should not be in the not very uncommon cases of severe anemia associated with enlargement of the spleen, with or without hemorrhages, in early life. Incidentally, it has been shown very definitely that the administration of liver and its extracts does not either prevent or cure anemia in childhood. It has also been shown again that the yolk of egg and prunes contain more iron than carrots and the "leafy" vegetables, including spinach.

Although not much has been written on this subject, clinicians and pathologists are both interested in the pneumonias of infancy. The evidence is accumulating that pathologic lobar pneumonia is really rare at this age and that, in many instances, what is clinically lobar pneumonia is really bronchopneumonia. It is also becoming evident that in many cases which are clinically bronchopneumonia, the stress of the disease falls on the interstitial tissue of the lungs, that is, the condition is really an inter-

stitial pneumonia or a pneumonitis. This fact explains the indefiniteness of the physical signs, the irregularity of the course, the high mortality and the tendency to chronicity. An interesting paper in this connection is that of Heimann and Cohen (*Archives of Pediatrics*, 1927, 44, 677). In a few instances albolene and similar oils, which had been used in the nose, have been found in the lungs of babies dead of bronchitis and bronchopneumonia. The question has been raised as to whether the oil was not the cause of the trouble in the lungs. A more likely explanation is that these oils were put in the noses of babies so near dead that the pharyngeal reflex was dulled and, on this account, the oil entered the lungs. At any rate, the evidence that the oil caused the trouble in the lungs is not sufficient to justify the giving up of a very useful procedure. Incidentally, if a few drops of oil in the nose can cause disease in the lungs, how can the injection of lipiodol for taking Roentgenograms be justified?

The discussion as to the etiology of "pyelitis" is still going on, but the solution of the problem seems no nearer than it did a few years ago. Nothing of importance has been learned as to the medical treatment. Everyone agrees, however, that, when there is constantly pus in the urine or there are frequent recurrences, the patient should be thoroughly studied by cystoscopy, catheterization of the ureters and pyelography, as in this way some organic and remediable cause may be found.

Chronic degenerative lesions of the kidney due to toxic absorption from some local focus of infection and characterized by large amounts of albumin, with few or no renal elements in the sediment, are now being more generally separated from the chronic inflammatory or interstitial diseases of the kidneys. The term "nephrosis" is applied to them. It is important to recognize them, because, if they are recognized and the focus of infection found and removed, the prognosis is much better in them than in the other forms.

Very little of importance has appeared as to the diseases of the nervous system. The most practical paper is that of Neal and Jackson (*J A M A*, 1927, 88, 1299) in which they emphasize the lack of symptoms pointing to the nervous system in meningitis in early infancy. At this age meningitis should be suspected in every acute case with high temperature in which there are no characteristic symptoms or physical signs of some other disease. The treatment of epilepsy in childhood by the production of a ketosis is still being studied and promises more than any method thus far tried. At present, however, it should not be used outside of hospitals nor by those not thoroughly familiar with the chemistry of metabolism.

costovertebral tenderness Edema of both lower legs to knees Pupils and reflexes normal

Amount of urine 40 to 60 ounces specific gravity 1.010 to 1.011 cloudy at all of five examinations a very slight trace to a trace of albumin at all 2 to 15 leukocytes 8 to 25 red cells hyaline and granular casts at all cellular casts at two Culture of a clean specimen showed staphylococcus albus Renal function 35 per cent Blood 16 500 to 6,100 leukocytes, 90 per cent polymorphonuclears hemoglobin 60 to 55 per cent reds 4 200 000 to 3 500 000 some anisocytosis Wassermann weakly positive Non-protein nitrogen 67 milligrams Uric acid 6.7 Creatinin 4.3 Icteric index 7

Temperature 98.9° to 103.2° rectal Radial pulse 64 to 103 with a pulse deficit of 52 to 8 Respirations 30 to 19

The day after admission the apical systolic murmur was transmitted to the base and the axilla Every third or fourth beat the first sound was very loud No diastolic was heard and no aortic murmur

The patient made excellent response to digitalis but continued very weak and ill The purpuric spots cleared up but a fresh shower appeared on the legs February 28 Dr White noted a loud third sound at the apex and a simultaneous palpable impulse February 29 there was bigeminal pulse March 2 the patient was discharged slightly improved

March 14 he died at home

DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

Palpitation of three months' duration in a boy of twenty gives at once a clue Of course a nervous boy can get palpitation from purely functional causes But there are very few cases I think in which a boy of twenty gets so far as to come into the hospital for palpitation that is not due to organic heart disease If it is due to that it is probably the heart disease that comes most often at twenty, rheumatic If it is rheumatic very much the commonest type of rheumatic heart disease is mitral stenosis Hence at the outset it is not a bad guess that this is a case of mitral stenosis

One would like to know whether the attack six weeks before admission was diphtheria or tonsillitis If it was diphtheria, there are possibilities of damage to the heart by diphtheria

The fact of edema rules out functional types of palpitation and makes it improbable that there is anything here that diphtheria can do to the heart

There was an editorial in the *Journal of the American Medical Association* recently on the great hygienic importance of laughter This is

one of the few cases I ever heard of on the other side

He must have lived at a distance from any city or he could not possibly have kept his tonsils three years

There is a connection which I do not understand between heart disease and nosebleed Nosebleed occurs rather more often in the septic type of heart disease than in the non-septic

NOTES ON THE PHYSICAL EXAMINATION

We have a queer record here You notice they felt a presystolic thrill Vibrations that we hear and vibrations that we feel are different chiefly in that the vibrations that we feel are coarser I believe it can be asserted that the vibrations that you feel you can also hear over the heart Yet they do not hear a presystolic murmur Either there is not a presystolic thrill or there is a presystolic murmur

What do the murmurs and the sounds make us think of?

STUDENTS Aortic regurgitation

DR. CABOT The big left ventricle also makes us think of that I have never seen such a pulse pressure as this is in uncomplicated mitral stenosis He could not have uncomplicated mitral stenosis with a blood pressure of 150/50 I believe

I have never been able to be convinced that the radiologists can tell valve lesions by the shape of the cardiac shadow The thing that is pointed out as evidence of mitral disease is seen in the X-ray here namely the flattening out of the left border But the heart is bigger than we expect in mitral disease I am beginning to suspect that there may be lesions on both valves

The total transverse measurement of the normal heart should be less than half the total internal diameter of the chest Here it is more

The significance of the visible pulsations of the chambers of the heart is that if this was an adhesive pericarditis it should be more difficult to see the pulsation of the different chambers

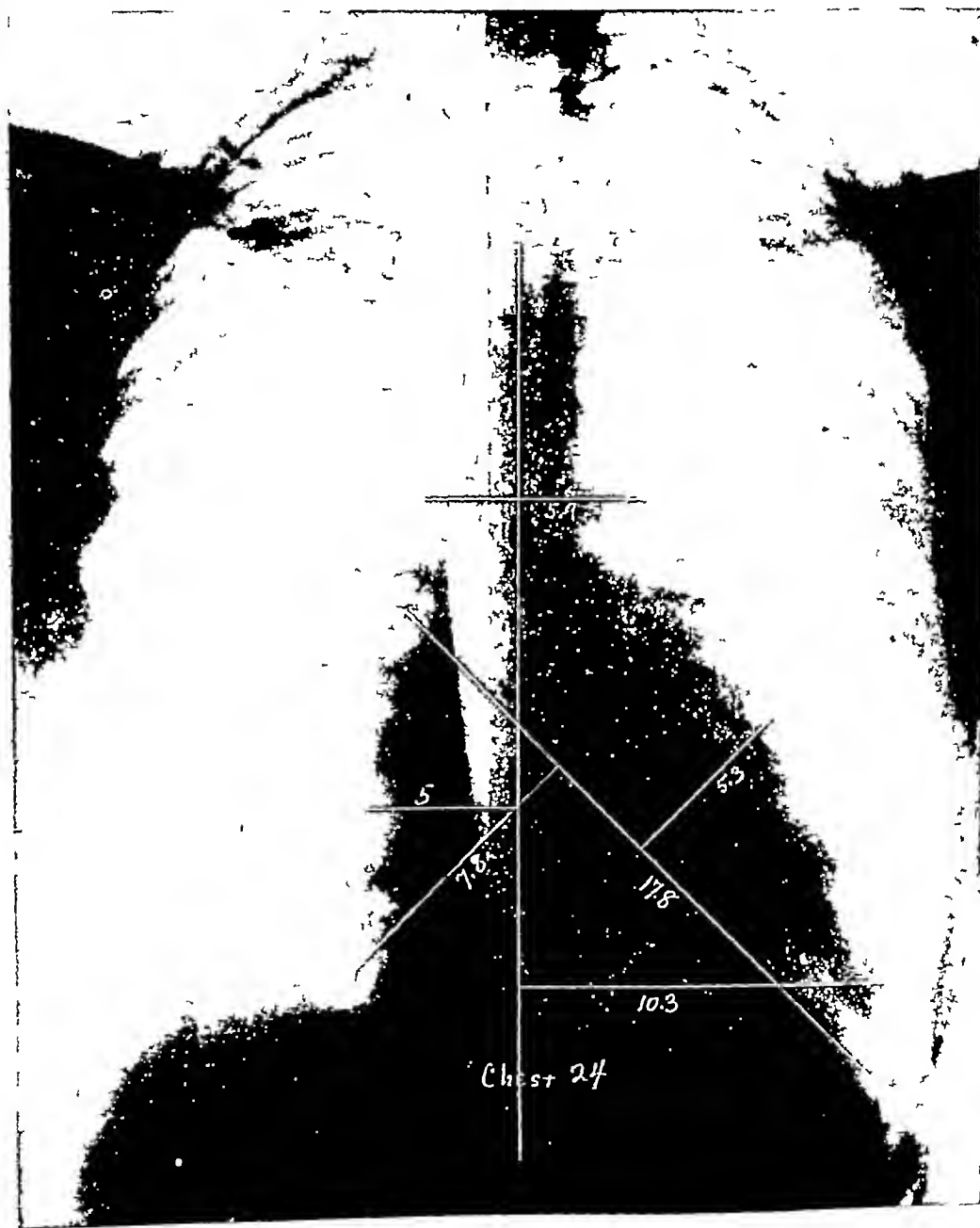
Broadbent's sign is retraction of the left ribs with systole It was once thought to mean adhesive pericarditis but Dr. Alice Tallant proved thirty years ago that it is present in any patient who has a big heart strongly beating within a thin chest In the conditions that we have here, the sign is of no value that I know

We ought to say what our guess is December 9 as to the diagnosis The signs are contradictory The pulse pressure suggests aortic regurgitation. But nothing is said about the pulse or about murmurs such as would confirm that The only murmurs given are those of mitral disease, presumably mitral stenosis But the heart is very large for mitral disease so one is not satisfied It is a case where one ought to find either more or less We shall hope to get more light at the second admission

This is a good test of the value of quinidine

bases Impulse of the heart visible, diffuse and forceful, from the second to the sixth interspaces, centering in the third and fifth as two points of maximum intensity and of different pulsating rhythm There was depression of the

soft low systolic followed by a high pitched blowing diastolic Marked left auricular hypertrophy with visible pulsation as described No murmurs at the base made out with rapid heart Artery walls normal Blood pressure 110/78 to



Shows marked prominence of the left auricle also considerable increase in the size of the shadow of the left ventricle downward and to the left

interspaces with the pulsations Left border of dullness 12 centimeters to the left, 4 centimeters outside the midclavicular line, right border 25 centimeters, supracardiac dullness $8\frac{3}{4}$ Palpable thrill at the apex and the pulmonic area Sounds fundamentally irregular Heart fibrillating rapidly Apex rate 135 At the apex a

127/73 An electrocardiogram showed auricular fibrillation with many ectopic ventricular contractions, frequently bigeminal Rate 80 Probable right bundle branch block Spleen palpable two fingerbreadths below the costal margin on inspiration Liver edge palpable Slight tenderness in both loins Neither kidney felt No

costovertebral tenderness Edema of both lower legs to knees Pupils and reflexes normal

Amount of urine 40 to 60 ounces, specific gravity 1 010 to 1 011 cloudy at all of five examinations a very slight trace to a trace of albumin at all, 2 to 15 leukocytes, 8 to 25 red cells, hyaline and granular casts at all, cellular casts at two Culture of a clean specimen showed staphylococcus albus Renal function 35 per cent Blood 16 500 to 6,100 leukocytes, 90 per cent polymorphonuclears, hemoglobin 60 to 55 per cent, reds 4 200 000 to 3 500 000 some anisocytosis Wassermann weakly positive Non-protein nitrogen 67 milligrams Uric acid 6 7 Creatinin 4 3 Icteric index 7

Temperature 98 9° to 103 2°, rectal Radial pulse 64 to 103 with a pulse deficit of 52 to 8 Respirations 30 to 19

The day after admission the apical systolic murmur was transmitted to the base and the axilla Every third or fourth beat the first sound was very loud No diastolic was heard and no aortic murmur

The patient made excellent response to digitalis but continued very weak and ill The purpuric spots cleared up, but a fresh shower appeared on the legs February 28 Dr White noted a loud third sound at the apex and a simultaneous palpable impulse February 29 there was bigeminal pulse March 2 the patient was discharged slightly improved

March 14 he died at home

DISCUSSION

BY RICHARD C CABOT, MD

NOTES ON THE HISTORY

Palpitation of three months' duration in a boy of twenty gives at once a clue Of course a nervous boy can get palpitation from purely functional causes But there are very few cases I think in which a boy of twenty gets so far as to come into the hospital for palpitation that is not due to organic heart disease If it is due to that it is probably the heart disease that comes most often at twenty, rheumatic If it is rheumatic, very much the commonest type of rheumatic heart disease is mitral stenosis Hence at the outset it is not a bad guess that this is a case of mitral stenosis

One would like to know whether the attack six weeks before admission was diphtheria or tonsillitis If it was diphtheria, there are possibilities of damage to the heart by diphtheria

The fact of edema rules out functional types of palpitation and makes it improbable that there is anything here that diphtheria can do to the heart

There was an editorial in the *Journal of the American Medical Association* recently on the great hygienic importance of laughter This is

one of the few cases I ever heard of on the other side

He must have lived at a distance from any city or he could not possibly have kept his tonsils three years

There is a connection which I do not understand between heart disease and nosebleed Nosebleed occurs rather more often in the septic type of heart disease than in the non-septic

NOTE ON THE PHYSICAL EXAMINATION

We have a queer record here You notice they felt a presystolic thrill Vibrations that we hear and vibrations that we feel are different chiefly in that the vibrations that we feel are coarser I believe it can be asserted that the vibrations that you feel you can also hear over the heart Yet they do not hear a presystolic murmur Either there is not a presystolic thrill or there is a presystolic murmur

What do the murmurs and the sounds make us think of?

STUDENTS Aortic regurgitation

DR CABOT The big left ventricle also makes us think of that I have never seen such a pulse pressure as this is in uncomplicated mitral stenosis He could not have uncomplicated mitral stenosis with a blood pressure of 150/50 I believe

I have never been able to be convinced that the radiologists can tell valve lesions by the shape of the cardiac shadow The thing that is pointed out as evidence of mitral disease is seen in the X-ray here namely the flattening out of the left border But the heart is bigger than we expect in mitral disease I am beginning to suspect that there may be lesions on both valves

The total transverse measurement of the normal heart should be less than half the total internal diameter of the chest Here it is more

The significance of the visible pulsations of the chambers of the heart is that if this was an adhesive pericarditis it should be more difficult to see the pulsation of the different chambers

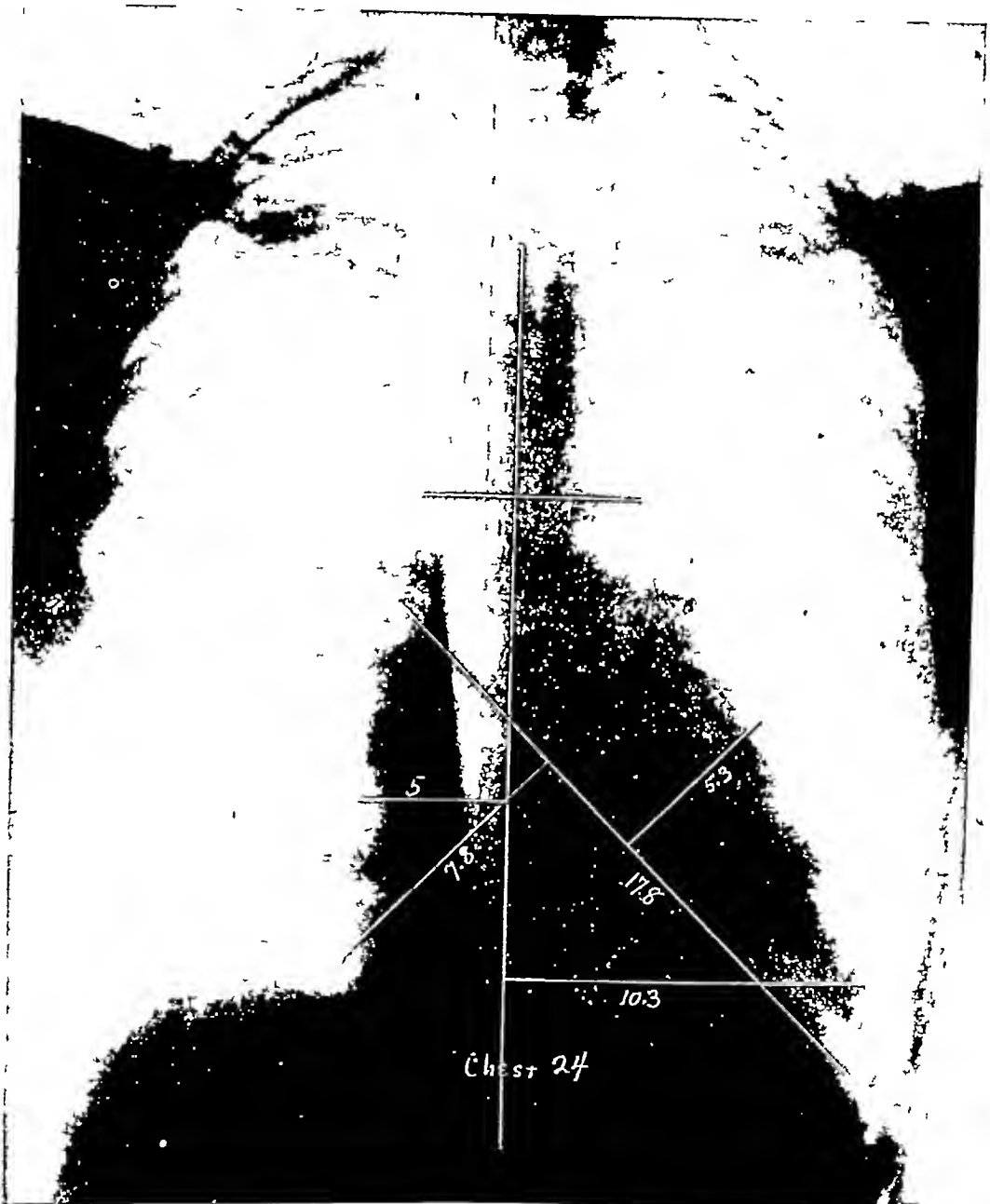
Broadbent's sign is retraction of the left ribs with systole It was once thought to mean adhesive pericarditis, but Dr Alice Tallant proved thirty years ago that it is present in any patient who has a big heart strongly beating within a thin chest In the conditions that we have here, the sign is of no value that I know

We ought to say what our guess is December 9 as to the diagnosis The signs are contradictory The pulse pressure suggests aortic regurgitation But nothing is said about the pulse or about murmurs such as would confirm that The only murmurs given are those of mitral disease, presumably mitral stenosis But the heart is very large for mitral disease so one is not satisfied It is a case where one ought to find either more or less We shall hope to get more light at the second admission

This is a good test of the value of quinidine

bases Impulse of the heart visible, diffuse and forceful, from the second to the sixth interspaces, centering in the third and fifth as two points of maximum intensity and of different pulsating rhythm There was depression of the

soft low systolic followed by a high pitched blowing diastolic Marked left auricular hypertrophy with visible pulsation as described No murmurs at the base made out with rapid heart. Artery walls normal Blood pressure 110/78 to



Shows marked prominence of the left auricle also considerable increase in the size of the shadow of the left ventricle downward and to the left

interspaces with the pulsations Left border of dullness 12 centimeters to the left, 4 centimeters outside the midclavicular line, right border 25 centimeters, supracardiac dullness $8\frac{3}{4}$ Palpable thrill at the apex and the pulmonic area Sounds fundamentally irregular Heart fibrillating rapidly Apex rate 135 At the apex a

127/73 An electrocardiogram showed auricular fibrillation with many ectopic ventricular contractions, frequently bigeminal Rate 80 Probable right bundle branch block Spleen palpable two fingerbreadths below the costal margin on inspiration Liver edge palpable Slight tenderness in both loins Neither kidney felt No

Chronic endocarditis of the mitral valve,
stenosis
Possibly ball thrombus in the left auricle
Infarcts of the spleen and kidneys
Possibly chronic glomerulonephritis

ANATOMIC DIAGNOSES

Subacute bacterial endocarditis (streptococcus
viridans)
Rheumatic heart disease (healed)
Chronic adhesive pericarditis

DR MALLORY The necropsy in this case was unfortunately restricted to removal of the heart, so that there are a great many questions I shall not be able to answer. The heart was much enlarged, weighing 580 grams, both ventricles dilated, the left very markedly hypertrophied, the right not at all hypertrophied. The aortic valve was entirely negative. The mitral valve showed a few old sclerotic and rheumatic lesions and an acute vegetation. However, there was no demonstrable functional deformity capable of producing either stenosis or any marked degree of regurgitation. The tricuspid was entirely negative. The pericardium was completely adherent.

DR CABOT That is very interesting. They took particular pains to see if it was pericarditis. All their methods said it was not. The chambers of the heart seemed to be free and the diaphragm moved up and down, was not obscured.

Your guess is that he had a chronic nephritis to make the heart big, plus—?

DR MALLORY Plus adhesive pericarditis.

The left auricle was quite enormous, and the ventricle was elongated as in aortic regurgitation. Hypertrophy due to chronic nephritis is usually concentric in type, without elongation, and the auricle is not commonly much dilated.

DR CABOT Why ought chronic pericarditis to lead to a large left auricle?

CASE 14112

METASTATIC OR PRIMARY?

SURGICAL DEPARTMENT

First admission An unmarried Irishwoman of twenty-six entered complaining of tumor of the right breast. Examination showed a tumor the size of a crab apple. Glands were palpable in the right axilla, none above the clavicle.

The right breast was amputated and the axilla dissected. The pathological report was carcinoma.

History of interval During the next fifteen years she married and had four children and two miscarriages. She reported at the hospital several times. At a visit eight years after her discharge she looked run down, and was ex-

amined in the Medical Out-Patient Department and given a diet. She was not seen again until her second admission. Six months before it she thought she felt a small lump in the left lower quadrant which was tender for a few days. Three months later her abdomen began to increase in size. She was jaundiced for a while. She went to a hospital where she was put on a salt free diet with restricted fluids for two months without much relief.

Second admission December 27, fourteen years and eight months after her previous entry.

Clinical examination showed a poorly nourished woman with sallow skin and mucous membranes and icteric sclerae. There was lordosis from the weight of the abdomen. The chest showed the scar of the old operation. There was a pea-sized nodule in the right midaxillary line. The lungs showed flatness at the bases to the fifth rib in front and to the angles of the scapulae. The heart was pushed up and outward by ascites. Abdomen enlarged. Marked ascites. Abdominal veins enlarged and prominent. Liver nodular, palpable halfway to the umbilicus. Scar of paracentesis low in the midline. Hemorrhoids. Edema of extremities. Pupils and reflexes normal.

Urine and blood normal. Icteric index 7. Wassermann negative.

Before operation chart normal.

X-ray showed no definite evidence of pathology of the lungs, forearms, legs and femora. There was some irregularity of the left fourth rib, perhaps of no pathological significance.

December 31 a nodule was removed from the liver for biopsy. The specimen from the liver itself was unfortunately lost. The omentum was negative. The patient was very uncomfortable, with distention and profuse leakage of ascites between the stitches. An abdominal tap was done January 6 and 800 cubic centimeters of clear colored fluid withdrawn, specific gravity 1.010, 1,200 leukocytes, all mononuclears, 200,000 red blood cells. Fluid still leaked profusely. January 9 the stitches gave way. The wound was resutured. Two days later she had vomiting. The wound was septic, though the temperature was normal. Culture from a stitch abscess showed staphylococcus aureus. The wound was strapped and painted with mercurochrome. The skin was icteric. The patient failed rapidly and seemed acidotic. January 16 she died.

DISCUSSION

BY EDWARD L. YOUNG, JR., M.D.

NOTES ON THE HISTORY

The icteric index of 7 is practically normal. The question of the interval history would seem to be only the question whether this was a recurrence of the old malignancy of fifteen years

It is a very queer to have so limited a paralysis as that in a case of this sort. Hemiplegia in cases like this is very common, due to a cerebral embolus. Bits of thrombus are thrown off from the left auricle or the mitral valve. But I have never known one to hit the arm center alone. One wonders if there was not more paralysis that was unnoticed.

The history of abdominal distention makes us wonder about mesenteric thrombosis.

I do not know how to explain the pain on flexion of the thigh.

With the appearance of red spots on the legs I begin to be pretty sure that this is a septic type of endocarditis.

The second clinical examination is quite different from the earlier one. The first time he was well nourished, now he is emaciated. Organic heart disease alone never does that. Besides heart disease we need something else to produce emaciation,—ordinarily sepsis.

We suspect infarct or bronchopneumonia, but the latter does not seem so likely.

Those heart signs are all very common in a big heart and do not mean anything in particular.

Depression of the interspaces does not mean anything. We used to say it pointed to old adhesive pericarditis, but that is not so.

Notice the great contrast between the measurements of supracardiac dullness now and at the first entry.

We cannot see auricular hypertrophy. It was strongly suspected here, but it should not be put down in the physical examination.

The blood pressure shows an extraordinary difference from the earlier record.

The spleen is enlarged, as it often is in the infectious type of heart disease. It is not ordinarily enlarged in other types.

I am in doubt as to whether he has nephritis or not. One of the best known causes of acute or subacute glomerulonephritis is the organism which is presumably affecting his heart. The facts about the urine are not quite distinctive.

The Wassermann does not mean anything in the presence of such a fever as he has.

The non-protein nitrogen is bothersome. It certainly is high, but not high enough to prove that he has bad kidneys. The creatinin and uric acid are both high.

DIFFERENTIAL DIAGNOSIS

I have no considerable doubt of the diagnosis of subacute bacterial endocarditis, this is based on the fever, the purpuric spots, the thrill, the anemia, the emaciation. Subacute bacterial endocarditis is a typical sepsis, and acts on the body as such, only it is a slow sepsis.

Where is this subacute process going to be found? I think it is going to be found on the mitral valve. It may be found on the aortic valve, but the evidence seems to be rather against

it. There may possibly be some on the tricuspid also, but when we make the diagnosis of a tricuspid lesion it is by accident.

Were there any blood cultures?

DR TRACY B. MALLORY: Yes, there were some taken that were positive.

DR CABOT: They should show the green producing streptococcus.

The heart is certainly big. It usually is in this disease, and there is usually old endocarditis as well as new. I think that is the case here. There should be some stenosis of the mitral, some old fibrous tissue with the fresh process. It is the sort of case in which we sometimes find a ball thrombus in the left auricle, but it is not quite so common as in chronic cases without sepsis. We expect to find that he has infarcts in his spleen and kidneys and very possibly elsewhere. The point I am most in doubt about is the kidneys. Has he a chronic nephritis? It is a good bet that he has, but it is not certain. He did not have any definite fixation test, but all the specific gravity tests recorded were 1.010 or 1.011.

A STUDENT: The lung signs were heard down the left scapula. Was that probably due to compression of the lung by a big heart?

DR CABOT: I have never heard these signs due to cardiac enlargement, but only with pericarditis.

A STUDENT: Could those signs in the left lobe of the lung and at the base of the scapula be explained by pericardial effusion?

DR CABOT: Yes, if there is any other evidence of it. I do not see that there is.

A STUDENT: Is not the urine output a little large?

DR CABOT: No, I should not say so, when you have a low gravity. When you have a high gravity there is a smaller amount of urine. With a gravity of 1.010 that output does not seem to be unusual.

A STUDENT: Do you feel that the kidney condition and the endocarditis were all part of the same thing?

DR CABOT: I believe they were. The first in order was endocarditis due to the streptococcus viridans, then the other process resulted.

A STUDENT: Do you think the pain in the back and left leg had anything to do with the kidneys?

DR CABOT: I do not see any good reason for thinking so. I have never known those symptoms to be associated with kidney pathology.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Rheumatic heart disease
Mitral stenosis and regurgitation
Auricular fibrillation
Subacute bacterial endocarditis

DR. RICHARD C. CABOT'S DIAGNOSIS

Subacute bacterial endocarditis of the mitral and possibly the aortic valve

Chronic endocarditis of the mitral valve, stenosis
Possibly ball thrombus in the left auricle
Infarcts of the spleen and kidneys
Possibly chronic glomerulonephritis

ANATOMIC DIAGNOSES

Subacute bacterial endocarditis (*streptococcus viridans*)
Rheumatic heart disease (healed)
Chronic adhesive pericarditis

DR. MALLORY The necropsy in this case was fortunately restricted to removal of the heart, that there are a great many questions I shall be able to answer. The heart was much enlarged weighing 580 grams, both ventricles dilated, the left very markedly hypertrophied, the right not at all hypertrophied. The aortic valve was entirely negative. The mitral valve showed a few old sclerotic and rheumatic lesions and an acute vegetation. However, there is no demonstrable functional deformity capable of producing either stenosis or any marked degree of regurgitation. The tricuspid was entirely negative. The pericardium was completely adherent.

DR. CABOT That is very interesting. They look particular pains to see if it was pericarditis. All their methods said it was not. The chambers of the heart seemed to be free and the diaphragm moved up and down, was not obscured.

Your guess is that he had a chronic nephritis make the heart big, plus—?

DR. MALLORY Plus adhesive pericarditis. The left auricle was quite enormous, and the ventricle was elongated as in aortic regurgitation. Hypertrophy due to chronic nephritis is usually concentric in type, without elongation, and the auricle is not commonly much dilated.

DR. CABOT Why ought chronic pericarditis lead to a large left auricle?

CASE 14112

METASTATIC OR PRIMARY?

SURGICAL DEPARTMENT

First admission An unmarried Irishwoman of twenty six entered complaining of tumor of the right breast. Examination showed a tumor the size of a crab apple. Glands were palpable in the right axilla, none above the clavicle.

The right breast was amputated and the axilla dissected. The pathological report was carcinoma.

History of interval During the next fifteen years she married and had four children and two miscarriages. She reported at the hospital several times. At a visit eight years after her discharge she looked run down, and was ex-

amined in the Medical Out-Patient Department and given a diet. She was not seen again until her second admission. Six months before it she thought she felt a small lump in the left lower quadrant which was tender for a few days. Three months later her abdomen began to increase in size. She was jaundiced for a while. She went to a hospital where she was put on a salt free diet with restricted fluids for two months without much relief.

Second admission December 27, fourteen years and eight months after her previous entry.

Clinical examination showed a poorly nourished woman with sallow skin and mucous membranes and icteric sclerae. There was lordosis from the weight of the abdomen. The chest showed the scar of the old operation. There was a pea-sized nodule in the right midaxillary line. The lungs showed flatness at the bases to the fifth rib in front and to the angles of the scapulae. The heart was pushed up and outward by ascites. Abdomen enlarged. Marked ascites. Abdominal veins enlarged and prominent. Liver nodular, palpable halfway to the umbilicus. Scar of paracentesis low in the midline. Hemorrhoids. Edema of extremities. Pupils and reflexes normal.

Urine and blood normal. Icteric index 7. Wassermann negative.

Before operation chart normal.

X-ray showed no definite evidence of pathology of the lungs, forearms, legs and femora. There was some irregularity of the left fourth rib, perhaps of no pathological significance.

December 31 a nodule was removed from the liver for biopsy. The specimen from the liver itself was unfortunately lost. The omentum was negative. The patient was very uncomfortable, with distention and profuse leakage of ascites between the stitches. An abdominal tap was done January 6 and 800 cubic centimeters of clear colored fluid withdrawn, specific gravity 1.010, 1,200 leukocytes, all mononuclears, 200,000 red blood cells. Fluid still leaked profusely. January 9 the stitches gave way. The wound was resutured. Two days later she had vomiting. The wound was septic, though the temperature was normal. Culture from a stitch abscess showed *staphylococcus aureus*. The wound was strapped and painted with mercurochrome. The skin was icteric. The patient failed rapidly and seemed acidotic. January 16 she died.

DISCUSSION

BY EDWARD L. YOUNG, JR., M.D.

NOTES ON THE HISTORY

The icteric index of 7 is practically normal. The question of the interval history would seem to be only the question whether this was a recurrence of the old malignancy of fifteen years

before or whether there was some other cause of portal stasis. The fact that she has had carcinoma before, the fact that her liver is now enlarged and nodular would seem to point toward an extensive recurrence of carcinoma in the liver. The question whether or not that was cirrhosis alone would seem to be very difficult to bring out in the face of the previous carcinoma. She has no more extensive ascites than we see in carcinoma of the liver. It is true that we do not often see enlarged abdominal veins in carcinoma of the liver and we do in cirrhosis. But it seems to me it would be a rather poor second diagnosis.

DR YOUNG'S PRE-OPERATIVE DIAGNOSIS

Probably malignant disease, recurrent in the liver

PRE OPERATIVE DIAGNOSIS DECEMBER 21

Metastatic carcinoma

FIRST OPERATION

Local novocain. A right upper quadrant incision disclosed several quarts of straw colored fluid in the peritoneal cavity. This was slowly withdrawn by means of the suction apparatus. The liver was very large, irregular and studded with nodules some of which showed a firm, white crater-like appearance. A section of one of these was removed with a Mixter punch.

PATHOLOGICAL REPORT

A pin-point fragment from the liver was lost. A small piece of omentum showed no evidence of malignant disease on microscopic examination.

FURTHER DISCUSSION

I think the only interesting thing there is the long time after the original focus of carcinoma before the recurrence came, during which time she had a chance to live a very comfortable life apparently.

DR W. P. COULS: Is it not very unusual for breast cancer to metastasize to the liver?

DR YOUNG: No, I should not say that was a rare metastasis. Breast cancer may recur locally in the glands, in the chest wall, or go directly through into the pleural cavity or to more distant areas such as the liver or bones, so that I should say that region is not more unusual than other places. I am very sure I have seen a great many cases come back with the liver involved.

Dr Mallory can answer that better than I can.

DR CABOT: Are you not surprised at an icteric index of only 7?

DR YOUNG: Yes, after the note of "icteric sclerae."

DR RICHARD B. KING: Do you think the nodule in the chest wall might have given the same information as to the abdominal mass as the liver?

DR YOUNG: Yes, I think it might have.

MISS PAINTER: I should like to ask Dr Mallory whether he really thinks it was a recurrence or another carcinoma.

DR TRACY B. MALLORY: That is hard to tell.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinomatosis

Carcinoma of breast

Metastases of liver and peritoneum

DR EDWARD L. YOUNG'S DIAGNOSIS

Malignant disease, recurrent in the liver

ANATOMIC DIAGNOSES

1. Primary fatal lesion

Metastatic carcinoma in liver, ovary and peritoneal lymph nodes

2. Secondary or terminal lesions

Fibrinopurulent peritonitis

Gangrenous infection of laparotomy wound

3. Historical landmark

Old surgical scar of mastectomy

DR MALLORY: The necropsy showed no evidence whatever of local recurrence. The wound and the glands on that side were entirely negative. There was, however, a huge liver filled with tumor nodules. Very careful examination of the remainder of the body showed only one very small tumor nodule in the ovary that possibly could have been the primary source of the tumor in the liver. This seems very improbable, however. It was only three millimeters in diameter, growing expansively with no destruction of the ovarian tissue. I doubt if anything of that size could have given rise to the extensive metastases in the liver. Microscopic examination shows a fairly well differentiated adenocarcinoma which is consistent with carcinoma of the breast of the relatively low grade of malignancy which one must assume if we grant that there was an interval of fifteen years between the former tumor and the recurrence.

The New England Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY
and the jurisdiction of the following named committee

For Three Years

JOHN W. BARTOL, M.D. FREDERICK T. LARD, M.D.
CHANNING FROTHINGHAM, M.D.

For Two Years

HENRY GAGE, M.D. Chairman EDWARD C. STREETER, M.D.
EDWARD W. TAYLOR, M.D.

For One Year

WILLIAM H. ROBEY, JR., M.D. ROBERT I. LEE, M.D.
ROBERT B. COLE, M.D.

EDITORIAL STAFF

DAVID L. EDGALL, M.D. STEPHEN REYNOLDS, M.D.
RED HUNT, M.D. HANS ZINSSER, M.D.
JOHN P. SUTHERLAND, M.D. BENJAMIN WHITE, PH.D.
GEORGE R. MINOT, M.D. HENRY R. VIETS, M.D.
FRANK H. LAHEY, M.D. ROBERT A. VICE, M.D.
SHIELDS WARREN, M.D.

WALTER I. BOWEN, M.D. Managing Editor

ASSOCIATE EDITORS

GEORGE G. SMITH, M.D. WILLIAM B. BREED, M.D.
JOSEPH GARLAND, M.D.

THE NEW HAMPSHIRE MEDICAL SOCIETY

PUBLICATION COMMITTEE

D. E. SULLIVAN, M.D. ELMER M. FITCH, M.D.
JOSEPH J. COBB, M.D.

THE VERMONT STATE MEDICAL SOCIETY

PUBLICATION COMMITTEE

WILLIAM G. RICKER, M.D. C. F. DALTON, M.D.
J. A. WARR, M.D.

SUBSCRIPTION TERMS \$5.00 per year in advance postage paid
for the United States Canada \$4.00, per year \$3.50 per year
for all foreign countries belonging to the Postal Union

Material for copy publication should be received not later
than noon on Saturday. Orders for reprints must be sent to
the Journal office 126 Massachusetts Avenue

The Journal does not hold itself responsible for statements
made by any contributor

Communications should be addressed to The New England
Journal of Medicine 126 Massachusetts Avenue Boston Mass

THE WRONG SERUM

(A STUDY IN ETHICS)

THE mind that conceived a tabloid press judged with accuracy the type of mental pabulum most suited to the average intelligence. The public wants its meat well seasoned and its pudding smothered in sauce, perhaps to be abreast of the times one should say applesauce. The temperate account of an epochal advance in medical science leaves it cold, but it thrills to the broadcasting by radio of an appeal for a blood donor, and erects monuments to the dog that helped bring antitoxin to Nome.

Particularly objectionable to our mind is the cheap and vulgar desire for publicity which inspired the recent flight to Quebec with a pneumonia serum of exceedingly questionable value in the case for which it was intended. We read with sorrow of Floyd Bennett's illness. We knew him to be a skilled and intrepid aviator, deserving of sympathy in his sudden affliction, and of necessity doomed to a considerable degree

of objectionable publicity. We knew that he was ill with pneumonia and that his fate was on the knees of the gods. We heard with passing interest of the departure of a specialist from New York. It was comparatively late in the course of the pneumonia that he must have arrived in Quebec, and both Quebec and Montreal and every city in Canada has physicians who are capable of directing the care of pneumonia patients even to the use of the oxygen tent.

We began to sit up and take notice however, when, on about the fourth or fifth day of the disease a frantic call was sent to New York for pneumonia serum. The machinery of the Guggenheim Foundation had been set in motion and it engaged accurately if noisily with that of the Rockefeller Institute. The stage was set. Motorevele police cleared the streets of New York for the precious fluid which was being rushed to the flying field where an aviator of international fame nervously paced the ground with motor tuned up and propeller turning, ready for the take off. The public was getting what it loved—serum and applesauce. The dramatic climax of the situation occurred in Quebec a few hours later. Nothing could have been more perfect from an artistic standpoint. It was the wrong serum.

Despite the great advances in aviation, it is not yet entirely a safe means of transportation. Every aviator takes his life in his hand when he flies. Lindbergh entirely ignorant we believe, of the gigantic hoax in which he was being made a dupe, was exploited at the risk of his personal safety, for the purposes of publicity. The stage setting however, was too perfect, even now the boomerang is returning, the more conservative newspapers are realizing that they and the public have had one put over on them.

THE COMMONHEALTH

The Commonhealth, the quarterly bulletin of the State Department of Public Health has again appeared among us, and as usual it makes good reading.

Director X. H. Goodnough of the Division of Sanitary Engineering has contributed an article on rural sanitation with special reference to water supply, Dr. Harold E. Miner, Connecticut Valley district health officer has written on the control of nuisances. Dr. Edward A. Lane, health officer of the Metropolitan District has written on the "district health officer" and Dr. Merrill Champion, director of the Division of Hygiene on health laws.

In addition May Day as Child Health Day is discussed by Albertine C. Parker, S.B. vice-chairman for Child Health Day, and the prenatal and pre school aspects of a community dental program by Dr. F. M. Erlenbach.

before or whether there was some other cause of portal stasis. The fact that she has had carcinoma before, the fact that her liver is now enlarged and nodular would seem to point toward an extensive recurrence of carcinoma in the liver. The question whether or not that was cirrhosis alone would seem to be very difficult to bring out in the face of the previous carcinoma. She has no more extensive ascites than we see in carcinoma of the liver. It is true that we do not often see enlarged abdominal veins in carcinoma of the liver and we do in cirrhosis. But it seems to me it would be a rather poor second diagnosis.

DR YOUNG'S PRE-OPERATIVE DIAGNOSIS

Probably malignant disease, recurrent in the liver

PRE-OPERATIVE DIAGNOSIS DECEMBER 21

Metastatic carcinoma

FIRST OPERATION

Local novocain. A right upper quadrant incision disclosed several quarts of straw colored fluid in the peritoneal cavity. This was slowly withdrawn by means of the suction apparatus. The liver was very large, irregular and studded with nodules some of which showed a firm, white crater-like appearance. A section of one of these was removed with a Mixter punch.

PATHOLOGICAL REPORT

A pin-point fragment from the liver was lost. A small piece of omentum showed no evidence of malignant disease on microscopic examination.

FURTHER DISCUSSION

I think the only interesting thing there is the long time after the original focus of carcinoma before the recurrence came, during which time she had a chance to live a very comfortable life apparently.

DR W P COUES. Is it not very unusual for breast cancer to metastasize to the liver?

DR YOUNG. No, I should not say that was a rare metastasis. Breast cancer may recur locally in the glands, in the chest wall, or go directly through into the pleural cavity or to more distant areas such as the liver or bones, so that I should say that region is not more unusual than other places. I am very sure I have seen a great many cases come back with the liver involved.

Dr Mallory can answer that better than I can.

DR CABOT. Are you not surprised at an icteric index of only 7?

DR YOUNG. Yes, after the note of "icteric sclerae."

DR RICHARD B KING. Do you think the nodule in the chest wall might have given the same information as to the abdominal mass as the liver?

DR YOUNG. Yes, I think it might have.

MISS PAINTER. I should like to ask Dr Mallory whether he really thinks it was a recurrence or another carcinoma.

DR TRACY B MALLORY. That is hard to tell.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinomatosis

Carcinoma of breast

Metastases of liver and peritoneum

DR EDWARD L YOUNG'S DIAGNOSIS

Malignant disease, recurrent in the liver

ANATOMIC DIAGNOSES

1 Primary fatal lesion

Metastatic carcinoma in liver, ovary and peritoneal lymph nodes

2 Secondary or terminal lesions

Fibrinopurulent peritonitis

Gangrenous infection of laparotomy wound

3 Historical landmark

Old surgical scar of mastectomy

DR MALLORY. The necropsy showed no evidence whatever of local recurrence. The wound and the glands on that side were entirely negative. There was, however, a huge liver filled with tumor nodules. Very careful examination of the remainder of the body showed only one very small tumor nodule in the ovary that possibly could have been the primary source of the tumor in the liver. This seems very improbable, however. It was only three millimeters in diameter, growing expansively with no destruction of the ovarian tissue. I doubt if anything of that size could have given rise to the extensive metastases in the liver. Microscopic examination shows a fairly well differentiated adenocarcinoma which is consistent with carcinoma of the breast of the relatively low grade of malignancy which one must assume if we grant that there was an interval of fifteen years between the former tumor and the recurrence.

MARKS, HOMER H M.D. Bowdoin Medical School, 1906 His subject is "Observations of Present Day Application of Blood Transfusion" Page 575 Address Berlin, N. H.

MORSE JOHN LOVETT A.B., A.M., M.D. Harvard Medical School 1891 Professor of Pediatrics Emeritus, Harvard Medical School, Consulting Physician at Children's and Infants' Hospitals Member New England Pediatric Society, American Pediatric Society, Association of American Physicians and Boston Obstetrical Society His subject is "Progress in Pediatrics" Page 583 Address 483 Beacon Street, Boston

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY

Foster S. Kellogg, M.D. Frederick L. Good, M.D.
Chairman Secretary
Frederick J. Lynch, M.D., Clerk

What is the treatment of Ectopic Pregnancy and what results should be obtained by prompt resort to appropriate treatment?

The treatment of Ectopic Pregnancy is immediate hospitalization and surgery on diagnosis.

Fourteen deaths are reported in Massachusetts in 1927 from Ectopic Pregnancy. Most deaths are apparently due to a failure to make a reasonably early diagnosis. Failure of early diagnosis is we believe from experience oftenest due to the practitioner's forgetting for the time being that this pathological condition is an ever present possibility in any woman in the child bearing period. Since this statement would seem to be true we believe the best method of reducing mortality is for each doctor once a year to read some good text book article on ectopic pregnancy that he may refresh his memory on types of cases for diagnosis. We have no hesitation in recommending as best for this purpose the monograph by Edward A. Schumann, M.D. (D. Appleton and Co. 1921). It contains illustrative cases and is a most practical as well as thorough work, and is not too bulky for general use.

The second part of this query cannot be better answered than by the last paragraph in Schumann's monograph. It is therefore quoted verbatim.

The hope for recovery of a woman afflicted with ectopic pregnancy is yearly growing greater, and the gynecologist who reviews the history of this remarkable lesion must complete his surveys with intense pride and gratification that the labors of his predecessors in this field have wrought such vast improvement in results. Consider Parr's statistics of 1876 when among 500 cases 386 perished of this lesion.

In 1918 in Philadelphia, there were 169 such patients admitted to hospitals, of whom thirteen died, or 7.7 per cent. These figures contemplate

all cases—those admitted to hospital when already moribund, as well as the more favorable types.

In Farrar's series of 309 cases, there were three deaths, or 97 per cent. In P. F. Williams' series of 147 cases, death occurred four times, a mortality of 2.7 per cent. Of Oastler's 106 cases seven died or 6.5 per cent. The writer has studied 307 cases with eight deaths, or 2.6 per cent.

On the whole then, it may be concluded that the average mortality in a well conducted clinic will be 4 per cent or under, and it is the firm belief of the writer that if every woman brought to a hospital with a correct diagnosis of ruptured ectopic pregnancy be subjected to immediate operation without regard to her condition, the mortality will be still further reduced. Two of the writer's eight deaths were a direct result of his lack of courage in operating upon moribund women and since this time, now four years ago, not once case has perished.

It has been said in high places that there is no excuse for the existence of gynecology as a surgical specialty but to him who has read this book the question is left as to whether or not a branch of medicine which has within a half century reduced the mortality of so dreadful an accident as the rupture of a gravid tube from 80 per cent to 4 per cent, has not justified its existence in full.

Questions of a similar nature to the foregoing will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

THE DOCTOR'S SADDLE-BAG

THE PATIENT HIRES HIS DOCTOR

SOMETIMES I wonder what patients have in their minds as their conception of the value to them of their medical service. They order it, they pay for it—not always, of course, but frequently—and frequently they do not take it even when paid for. It seems downright uneconomical, but perhaps they are slaves to a budget system by which a certain sum must be paid for medical attention whether they want it or not.

The other night a frantic mother called her physician up at 2.00 A.M. (He knew the exact time because he had a clock with an illuminated dial.) Her four-year-old was very sick, she was nauseated and wanted to vomit, but couldn't, unhappy child. An inspiration seized him as his numbed senses dragged themselves out of an abyss of sleep.

"Has she eaten anything out of the ordinary?" he asked.

"No, doctor, only a chocolate lollipop."

HOSPITALITY OF THE NEW YORK CITY ACADEMY OF MEDICINE

THE New York Academy of Medicine is one of the great medical institutions of the world. It aims to place at the disposal of the medical profession information both local and general which may be desired. It has opened its doors to visitors from abroad as well as to members of the State Society and will furnish information concerning clinics, post graduate study, stations of the Board of Health, how to get a patient into a hospital and in short places its resources at the service of all visiting physicians, even to providing a rest or waiting room for doctors or their families.

Two stated meetings are held each month and twelve sections to which visitors are welcome.

Its library is one of the largest in the world among those devoted to medicine.

This great organization is an inspiring example of what may be accomplished when interests unite to promote the best service to humanity.

Every city should have some medical center whether it be under the designation of academy or some other suitable title which may weld the medical profession and its allied interests into an effective organization.

This is especially true of Boston where the Medical Library, the hospitals, medical societies, dental and nursing organizations should have a common meeting ground.

Until all health agencies come to feel a common responsibility and coordinate there is apt to be duplication of effort.

It may be that the Boston Medical Library will assume leadership in a movement to follow the example set by New York.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors

FITZ, REGINALD A. B., M. D. Harvard Medical School, 1909. Physician, Peter Bent Brigham Hospital, Associate Professor of Medicine, Harvard Medical School. His subject is "What Would You Do If You Had A Peptic Ulcer?" Page 539. Address Peter Bent Brigham Hospital, Boston.

GOLOB, MEYER Ph. D., M. D. Medico Chirurgical College of Philadelphia, 1908. Attending Gastrointestinal Diseases, Vanderbilt Clinic, Columbia University, Assistant Internal Medicine, Columbia University. His subject is "Duodenal Ulcer Without Symptoms" Page 546. Address 25 West 81st Street, New York City.

MONROE, ROBERT T. A. B., M. D. University of Michigan, 1924. Associate in Medicine, Peter Bent Brigham Hospital, Assistant in Medicine,

Harvard Medical School. Address Peter Bent Brigham Hospital, Boston. Associated with him is

EMERY, EDWARD S., JR. A. B., M. D. Harvard Medical School, 1920. Assistant in Medicine, Harvard Medical School, Junior Associate, Peter Bent Brigham Hospital. Address 520 Commonwealth Avenue, Boston. Their subject is "Gastrocolic Fistula as a Result of Peptic Ulcer" Page 550.

LANE, C. GUY A. B., M. D. Harvard Medical School, 1908. Assistant in Dermatology, Harvard Medical School, Assistant Dermatologist, Massachusetts General Hospital, Consultant in Dermatology, Deaconess Hospital, Boston. His subject is "Standards in Industrial Dermatology" Page 553. Address 416 Marlborough Street, Boston.

BRANCH, CHARLES F. M. D. University of Vermont Medical College, 1923. Assistant Professor of Pathology, Boston University School of Medicine, Pathologist, Massachusetts Homeopathic Hospital. Address 80 East Concord Street, Boston. Associated with him is

NORTON, RICHARD H. D. M. D. Tufts Dental School, 1910. President, Massachusetts State Dental Society, Associate Professor of Oral Surgery, Tufts Dental School, Staff Oral Surgeon, Massachusetts Homeopathic Hospital, Palmer Memorial and Massachusetts State Cancer Hospital. Address 15 Bay State Road, Boston. Their subject is "Metastatic Hypernephroma of the Jaw" Page 559.

EASTMAN, EUGENE B. A. M., C. M. McGill University Faculty of Medicine, 1902. F. A. C. S. Medical Referee, Rockingham County, N. H. His subject is "Papilloma of the Ovary" Page 562. Address 32 Congress Street, Portsmouth, N. H.

BOWLER, JOHN P. A. B., M. S., M. D. Harvard Medical School, 1919. F. A. C. S. Surgical Staff, Hitchcock Hospital, Hanover, N. H. Associated with him is

DESBRISSAY, H. A. M. D., C. M. McGill University Faculty of Medicine, 1917. Medical Staff, Hitchcock Hospital, Hanover, N. H. Address Hanover, N. H. Their subject is "Some Aspects of Pancreatitis" Page 568.

WIGHTMAN, ORRIN SAGE, M. D. New York University Medical College, 1898. His subject is "Syphilis of the Circulatory System, With Especial Reference To Aneurysm of the Aorta" (illustrated by Moving Pictures) Page 571. Address 7 East 88th Street, N. Y. City.

BLOOD, ROBERT O. M. D. Dartmouth Medical School, 1913. F. A. C. S. Member of Surgical Staff, Margaret Pillsbury General Hospital. His subject is "Premature Separation of the Placenta with Histories" Page 572. Address 5 So State Street, Concord, N. H.

The diagrammatic reproduction of several roentgenographs was made and marked off into three zones. Zone I contains the root shadows. Zone II, the trunk shadows gradually fading out into their subdivisions and Zone III radiating lines from the hilum and shading off before the periphery is reached. A conglomerate shadow commonly called the hilum shadow when found lying entirely within Zone I may be regarded as normal except where it is made up of a solid mass of homogeneous shadow giving doubtful evidence that it represents a growth or diaphragmatic pleurisy. Calcified nodes at the root of the lung without evidence of lung disease are of no significance except as a possible evidence of some old inflammatory condition possibly but not necessarily tuberculous. Where in Zone II and III normal shadows do not gradually fade out as described, the appearance may be due to a variety of conditions of an inflammatory nature or otherwise. It may accompany a tuberculous process but is not necessarily indicative of tuberculosis.—*Clinical and X-ray Findings in the Chests of Normal Children* Henry K. Pancoast, Kennon Dunham and F. H. Baetjer. *American Review of Tuberculosis* July 1922 VI 331-340.

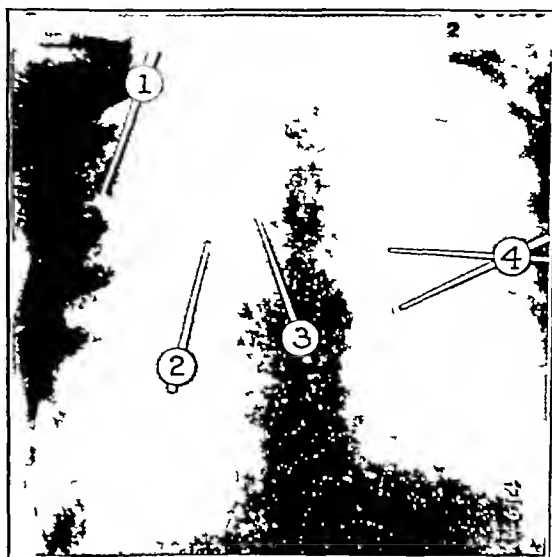


Composite X-ray made from several roentgenographs of normal children's chests and divided into zones.

THE HEALTHY ADULT CHEST

The same group of clinicians and roentgenologists later attempted to describe the roentgenological appearance of the normal adult chest. In view of the many lasting evidences of previous disease found in initially normal chests it was decided to discontinue the use of the term *normal chest* and adopt that of *healthy chest*. On this basis the clinicians selected 50 adults whose chests were clinically normal. Relationships and appearances of the bones, soft parts, diaphragm, heart, aorta, trachea, and bronchi were studied as well as the hilum shadow, the trunk shadows, and calcifications. It was found convenient and practical to divide the chest into zones as in the children's chest studies. Another valuable landmark was established by dropping a perpendicular line from the mid point of the left clavicle. This line passes well outside the middle of the dome of the left diaphragm and the apex of the heart is well within the line. Calcifications were almost universally noted in one or both hila by two members of the X-ray group and not so frequently by the third member.

Calcifications were occasionally found in the upper lobes and quite frequently along the heavy trunks to the lower lobes. As calcified tuberculous lesions increase with age and as they are more numerous with children in contact families than with those in non-contact families it was concluded that calcified tracheobronchial lymph nodes in adults are less significant than in children for in most instances healing has doubtless occurred.



PERIPHERAL NODULE WITH TRACHEOBRONCHIAL CALCIFICATION

In the left fifth interspace near the posterior axillary line is an irregular calcified nodule (1). On the shadow of the left arterial main stem at the level of the sixth rib and interspace is a faint irregular calcium shadow (2) and another irregularly club-shaped line mesially on the aortic curve at the sixth rib (3).

The homogeneous densities on the right (4) are due to blood vessels axially radiated.

Pottingerograph and Interpretation by F. M. McPhedran

The complete report illustrated with diagrams and X-ray photographs may be secured through the tuberculosis society—*Studies on Pulmonary Tuberculosis II The Healthy Adult Chest* Henry K. Pancoast, F. H. Baetjer and Kennon Dunham. *American Review of Tuberculosis* April 1927 XV 429-471.

X-RAY FOR DISCOVERING JUVENILE TUBERCULOSIS

A study of 50,000 school children made by the Massachusetts Department of Health showed that 37 per cent had hilum (tracheobronchial) tuberculosis. Without a roentgenograph no absolute diagnosis of hilum tuberculosis can be made nor can tuberculosis be eliminated in an ill child unless the X-ray films are negative. Slight changes in area or of density of the hilum shadows are of no significance but areas of increased density at the root of the lung or along the trachea that have the form of glands or gland masses justify the assumption that calcified tuberculous glands are present. Rarely one finds a large area of homogeneous shadow extending from the hilum toward the periphery due to a recent first infection with tubercle bacilli. Serial films taken at several months intervals show a gradual absorption ending eventually in a small calcified nodule.—*The Diagnosis and Prognosis of Juvenile Tuberculosis* Henry D. Chadwick. *Boston Medical and Surgical Journal*, January 26, 1928. CXCII 1399-1401.

"Do you expect, then, that your daughter will not be sick if you feed her chocolate lollipops?" he expostulated

"But doctor, she has had only four or five "

"Then," he replied indignantly, "you are getting exactly what was coming to you " The trouble was, he said it to himself He didn't even ask if the baby had eaten the sticks on which chocolate lollipops are usually impaled, like the heads of the victims of the Lord High Executioner's peculiar sense of justice He merely told her how to make the baby vomit Of course there was no ipsecac in the house but there are ways—

This patient had had a careful diet outlined for her child, I was told, and had paid for it, and so far as I remember chocolate lollipops were not even negatively mentioned He had not even said that one or two might be given for dessert if the child was feeling bilious Even his just wrath, however, was tempered by the consciousness that mothers do not like to be withered with scorn or heaped with contumely when frantic because their children are trying to erupt a half dozen chocolate lollipops, with or without their wooden skewers

What a shame that the bon mot, the tart and pertinent retort cannot be used, for reasons of policy, when thought of in time, and that on all other occasions it is conceived after the receiver has been hung up, ten minutes or ten days too late! It is only in writing that we can put the pat repartee to its fullest use, and then we are simply shadow boxing

It is curious that so many people fail to appreciate the value of preventive or health-conserving medicine as it may be personally applied and derived, to the satisfaction of both parties concerned, from the practice of their medical retainers They will not see it, they want their chocolate lollipops and they want their doctors to rescue them from their folly, painlessly and inexpensively, at 2 00 A M by an illuminated dial Even the Professor of Social Ethics at Harvard University, who, like a modern Moses, leads his people out of the bondage imposed upon them by the Pharaohs of medicine, fails to appreciate the wisdom of preserving health, on the advice of the physician, even while he admits—having convinced himself of the fact,—that medicine cures but rarely Under the banners of doubt, shaken confidence, and Christian Science he scuttles towards the Red Sea, hoping that the tide will be out, anything to save the Israelites from the whip lashes of the pill dealing fraternity

The Professor, while we are on the subject, does wrong to advocate Christian Science Christian Science has done much harm in the presence of organic pathology, and has done a little good in its absence The good which it does in the alleviation of mental distress and in the fostering of a hopeful attitude of mind is an old, old arrow in the quiver of medical practice That

arrow has been whetted and gilded by an emotional cult and taken as its only missile, discarding all the others, and when it is sped the quiver is empty

The Professor shows a curious attitude of mind when he recommends the cult and its one weapon, often unintelligently employed, instead of that weapon in the hands of those who know best how to use it, and have other weapons as well, with which to fight disease

However, it's all in a day, and the public loves to be hoodwinked, particularly in its selection of medical advisers Physiology and pathology and health and disease they love to consider as mysteries, and the more mystery there is surrounding them, the better they love the medicine man The average person is more than a little superstitious and has a decided atavistic hankering after miracles That is why the most intelligent among us, to all appearances—the most hard boiled broker, the twenty minute egg of a realtor, the dyed in the wool conservative banker, will forsake his trusted and dependable family physician to have his leg pulled by an osteopath or his vertebrae dislocated and relocated by a chiropractor—because they advertise their skill in a new, remarkable and miracle performing method, which, by a simple adjustment, will cure an earache, a toothache or a stomach ache, laryngitis, appendicitis or peritonitis, or cancer in any of its forms

After all is said and done, the cults, the quacks and the cranks are a boon to the medical profession for they give us something to keep our indignation in training on

MISCELLANY

TUBERCULOSIS ABSTRACTS

A REVIEW FOR PHYSICIANS ISSUED MONTHLY BY THE
NATIONAL TUBERCULOSIS ASSOCIATION



THE X ray is a valuable diagnostic aid in diseases of the chest Definite roentgenological evidence of enlarged lymph nodes, plus a positive tuberculin reaction strongly indicates tuberculosis of the juvenile type Definite parenchymal changes seen in the X ray film located usually in the upper half of the chest and which coincide with the clinical findings, strongly support the diagnosis of pulmonary tuberculosis But the X ray must be regarded at best merely as an aid to diagnosis Interpretations of the plate should always be made by roentgenologist and clinician jointly

CHEST OF NORMAL CHILDREN

A group of three roentgenologists working in close co-operation with as many clinicians attempted to establish the X ray appearance of the normal child's chest Five hundred children were studied While it was found impossible to describe a normal chest they succeeded in establishing a theoretical normal with wide variations that would serve as a basis for the interpretation of abnormal appearances A com

LIABILITY INSURANCE

April 24, 1928

Editor NEW ENGLAND JOURNAL OF MEDICINE

Dear Sir

I believe it advisable to notify the physicians, through your *Journal*, that Physicians Liability Insurance policies are written to cover malpractice, error or mistake and that they do not cover General Liability. In other words if a patient slips on a rug or falls off a chair, or anything of this kind in a Doctor's office it is not covered by a malpractice policy but comes under a General Liability policy.

It is also advisable that the doctors should realize more fully the necessity of immediate report on receipt of notice of claim and not wait until they get a summons into court.

The statement made some time ago write no letters and destroy no letters should be followed more closely in relation to the public than it is. They should write more freely to their Agency, giving all information and help possible.

Doctors should be careful with whom they discuss claims and give the company all help possible in blackmail suits against themselves or a fellow practitioner. Many suits are the direct result of an unguarded remark of another physician.

There have been several large verdicts rendered in the last few months against physicians but fortunately through the immediate investigation thorough preparation, coöperation of the physicians and an able Legal Department we have no court record against us to date. The service the Company is rendering by investigation preparation and trial has been very costly.

We would like to express our appreciation here of the coöperation of many physicians and with the continuance of this coöperation we hope to keep our slate clean.

Yours very truly

GEORGE H. CROSBIE

Agent for the United States Fidelity
& Guaranty Company

TO THE PHYSICIANS OF LAWRENCE METHUEN ANDOVER AND NO ANDOVER

Dear Doctor

The Lawrence Cancer Clinic under the auspices of the Massachusetts Department of Public Health was opened at the Out Patient Department of the Lawrence General Hospital Tuesday April 24 at 10 A. M. and will continue thereafter upon the first and third Tuesdays of each month.

This Clinic will be manned by the thirty five members of the Medical Staff of the Hospital and will be in charge of the regular surgical and medical chiefs on service in the house and associates. Consultation service will be available locally and from Boston.

The Clinic will be conducted upon ethical standards and patients after examination will be referred to the family physician for advice and treatment, and a form letter giving the findings mailed to the latter.

This is a free diagnostic clinic and will have a social worker attached who will follow each case to its disposal.

All physicians in the north half of Essex County are cordially invited to use this Clinic.

Among the objects of the Clinic are the following

1 To reduce the period between the discovery of the lesion or symptom and first visit to physician

2 To reduce the time between diagnosis and inauguration of effective treatment

3 To assist needy cancer patients to receive adequate treatment. Of these latter, some will be admitted to L G H wards and others referred to Pondville Hospital Wrentham Mass under charge of the Department of Public Health.

The co-operation of each physician is desired

ROY V BAKETEL, M.D.,

CHAS J BURGESS, M.D.

J FORREST BURHAM M.D.

FREDERICK D McALLISTER M.D.

JOHN J McARDLE, M.D.

HARRY H NEVENS, M.D.

THOS V UNLAC, M.D.,

Joint Cancer Committee of

Laurence Medical Club and

Laurence General Hospital

April 14 1928

GRATITUDE OF THE KENTUCKY BOARD OF HEALTH

Editor, NEW ENGLAND JOURNAL OF MEDICINE

I hesitate to impose on you again but recently my good friend Dr Coit of Pittsfield sent me a pronouncement from the august State Board of Health of Kentucky calling on the people in their several houses of worship to thank the Divine Ruler that the State Board of Health has been kept out of politics. With the many excellent things that my predecessors have done I think perhaps they have not paid sufficient attention to the spiritual aspects of the work of this Department and we will consider seriously taking a leaf out of the excellent book of the State Board of Health of Kentucky. I am enclosing a copy of what purports to be the authentic Kentucky pronouncement.

Cordially yours

GEORGE H BIGELOW M.D.,

Commissioner of Public Health

COPY

STATE BOARD OF HEALTH OF KENTUCKY

A. T McCormack M.D. Sixth and Main Streets
State Health Officer Louisville Kentucky

To the People of Kentucky Greetings

In this solemn hour of victory the medical and pharmaceutical professions of the Commonwealth have requested the State Board of Health to invite you to assemble in your respective houses of worship on Sunday March 25th that we may express our gratitude to the Divine Ruler of the Universe for His support during the terrible battle at Frankfort, between the predatory politicians who sought to obtain control of our public health organization that it might be exploited for selfish partisan purposes and the aroused public opinion of the people who were determined that the responsibility for the health and lives of the citizens of Kentucky should remain with the profession which has exercised it for half a century.

The State Board of Health of Kentucky is fifty years old today. Created by the General Assembly during the crisis of epidemics of yellow fever and cholera it has with the co-operation of the medical profession and people prevented any epidemic of exotic pestilence during these fifty years. The annual death rate has been reduced from 29 to 11.7 per thou

SERIAL X RAYS TO FOLLOW PROGRESS

Many roentgenologists and clinicians advise that X ray plates be made serially, that is at regular intervals in order to determine (in conjunction with clinical findings) whether the disease is progressing, retrogressing or remaining stationary. A brief summary of the course of tuberculosis as followed by the X ray is as follows:

In early active tuberculosis, infiltration most commonly appears in the periphery of the lung above the level of the third rib. The shadows appear light and fuzzy or mottled, densest in the centre. Leading from the mottling toward the lung hilum, there are usually seen fuzzy areas along the linear markings and the bronchial trunks. As the disease progresses the mottling may spread over a considerable area and the shadows seem to coalesce. The densest shadows are interpreted as caseation and these usually appear where the dense areas in the mottling were first seen. From infiltration to caseation ordinarily requires more than a month. Later, the dense caseous shadows become less dense and often entirely disappear, thus leaving areas of rarefaction. By the coalescence of several such areas, a large area involving, sometimes, the greater part of the upper lobe may result giving evidence of cavitation. As healing begins the hazy outlines particularly those at the hilum, become sharper and the areas shrink. Definite opacity is interpreted as deposits of calcium. Consolidated areas, as they become fibrous show heavy bands extending from the hilum to the periphery. After calcification takes place, areas interpreted as caseation increase in density and finally become sharp and opaque. Calcification is found to develop from eight months to two years. The obliteration of cavities may be shown by the X ray. Around the areas of rarefaction (cavitation) is seen a dense ring (fibrous wall). As fibrosis increases, the ring contracts until there remains only a heavy clouding or small deposits of fibrous tissue.—*Modern Aspects of the Diagnosis, Classification and Treatment of Tuberculosis*, J A Myers, Chap IX, p 96, Williams & Wilkins

RECENT DEATHS

NICKERSON—DR GEORGE WHEATON NICKERSON, a Fellow of the Massachusetts Medical Society since 1884 died at his home in Stoneham April 27 1928 at the age of 76.

Dr Nickerson was a native of Martha's Vineyard, a graduate in medicine at the College of Physicians and Surgeons, Columbia, New York in 1878, and settled in practice in Woburn. He moved to Stoneham in 1895. There he was town physician for a number of years.

From 1892 to 1895 he was a councilor from the Middlesex East District of the Massachusetts Medical Society and in 1897-1899 president of that district. He was a Fellow of the American Medical Association.

Dr Nickerson is survived by his widow.

DONAHUE—DR HUGH DONAHUE of Haverhill died in that city, April 24, 1928, following a cerebral hemorrhage a week previously. He was a graduate of Harvard Medical School in the class of 1888, joined the Massachusetts Medical Society the following year and settled in Haverhill.

He had been interested especially in the diseases of children and had studied in that department on several visits to Germany.

HOITT—DR EUGENE GOBHAM HOITT formerly of Belmont, died at Seattle, Wash., April 12, 1928, aged 78. He was a graduate of the University of Buffalo Medical School in 1881, joined the Massachusetts Medical Society in 1883, when he settled in Marlborough. In 1915 he moved to Dorchester and the following year to Belmont. Two years ago he went to Seattle to be with his cousin, Ralph H. Hoitt. He was a life member of Aleppo Temple of A A O N M S of Boston and of Belmont Blue Lodge F & A M of Belmont.

Dr Hoitt is survived by his widow, Gladys H. Hoitt.

CORRESPONDENCE

USE OF THE CABOT CASE HISTORIES

Quincy, Illinois, April 24 1928

Editor NEW ENGLAND JOURNAL OF MEDICINE
Boston, Massachusetts

My dear Doctor:

While reading in a recent *Journal* of the use that is made of Cabot's Case histories it occurred to me that it might be worth while to tell of our Quincy Physicians' Study Club composed of 21 members of the Adams County Medical Society resident in this city.

The Club has been organized for over five years; the roster of membership is full and all the members are enthusiastic over the study club and its accomplishments.

Meetings are held twice a month at 8 15 P M in the homes of the various members. The evening is given over first to the study of one of the Cabot Case histories, the leader having been selected two weeks in advance; he selects the case for discussion, and the secretary of the Club sends out multigraph copies of this case to the members the week preceding the meeting. Of course the discussion is not included or printed on the sheet sent each member.

When the night of meeting comes the history is read by the leader of that meeting and then each member is required to write out his diagnosis and hand the same to the leader. He takes up the various diagnoses in turn and each physician discusses his own giving the reasons for the faith that is in him. General discussion awaits the reading of Dr. Cabot's discussion and the various diagnoses. These are multigraphed on a separate sheet and handed to each member.

In addition to the one case history some member who has been previously notified gives a resumé, written of the advances and progress of that branch of medicine or surgery which he has chosen for his own field. After the scientific meeting is held there are always refreshments served by the gentleman who is host for that meeting.

The work of the Quincy Physicians' Study Club has been most profitable to the members, all of whom are better diagnosticians now than they were 5 years ago. We recommend it as a workable plan for any group of doctors who want to keep up with the advances of medicine and surgery.

Very truly yours

C A WILLIS M D

REPORTS AND NOTICES OF MEETINGS

HARVARD MEDICAL SCHOOL

On Monday April 16th 1928 at 5 00 P M Professor Bruno Bloch distinguished dermatological investigator of Zurich spoke at the Harvard Medical School on 'The Formation of Pigment in the Skin'

Professor Bloch limited his lecture to the study of melanin. The study of melanin formation said Professor Bloch is a morphological as well as a chemical problem. There are two kinds of pigment cells. The first of these, the melanophores are found deep in the corium of the skin and are tissue cells which have phagocytized pigment; they themselves are incapable of producing pigment. The melanophores or Mongolian cells are found mainly in the Mongolian and Negro races; the difference between these races and the Caucasians being merely a quantitative one; they are also normally found in the so-called "blue naevus". The other cells, the melanoblasts are found in the epidermis and are capable of forming pigment. The normal pigment in the body is due to the presence of melanophores which in the eye are of ectodermal origin and in the skin of mesodermal origin.

Chemically pigment has not been formed artificially. Melanin is found to be soluble in water and organic solvents and consists of nitrogen (not amino nitrogen) oxygen hydrogen and iron. Some observers believe that melanin is formed from tyrosine by the action of tyrosinase which has been demonstrated in haemolymph glands and in the lymph follicles of other structures in the body. In special studies on Addison's disease Professor Bloch finally concludes that melanin is formed by a special ferment. He noticed a close chemical relation between adrenalin and dioxyphenylalanine. Thus if tissues are put in contact with dioxyphenylalanine the melanoblasts will stain a brown color. This is due, thinks Prof. Bloch, to the presence of a ferment which he calls dopaoxidase and the reaction the dopa reaction. The letters of the word dopa come from the first letter of each part of di-oxy phenylalanine. This reaction of a fermentative nature is very specific and depends on the presence of the ferment in the cells. Thus in albinos there is no positive dopa reaction; white guinea pigs also give a negative reaction.

A study of chick embryos shows that pigment in the eye begins to form at the 5th day, reaches a height on the 7th and ceases on the 8th day. Thus in adult life the dopa reaction gives indications of a reversion to embryonic function and of malignant growths. Melanotic carcinomata give a positive dopa reaction. Further proof is found in the fact that dioxyphenylalanine can sometimes be demonstrated in the urine of patients with melanotic carcinoma.

Professor Bloch made several conclusions. First the dopa reaction is positive wherever melanotic pigment is formed; that is in the melanoblasts. Second, there is a time place and intensity relation between the dopa reaction and natural melanin formation. Thus Professor Bloch finally concluded not only is the dopa reaction an indicator of melanin formation but it is actually identical with the natural ferment which he then calls dopaoxidase.

The lecture was well illustrated with charts, wax

models and tissue sections so that it was extremely interesting.

Professor Bloch attended the clinical meeting of the New England Dermatological Society at the Boston City Hospital previous to the lecture and following it he was a guest, with Dean Edsall, at the dinner of the Society held at the University Club. Professor Bloch spoke on the teaching of dermatology, illustrating it by a description of his clinic in Zurich. Dean Edsall discussed plans for the future of the dermatological department in the School.

HARVARD MEDICAL SOCIETY

The Harvard Medical Society held a meeting on April 10 1928 at 8 15 o'clock at the Peter Bent Brigham Hospital. After the presentation of cases Professor Hans Zinsser of the Harvard Medical School spoke on Bacterial Allergy in Relation to Infections.

The first case was presented by Dr. Marlowe. The patient was a 12 year old girl with an irrelevant past and family history. About eight weeks ago she had a feeling of malaise followed by a definite chill. These continued occurring every three or four days. In spite of the fact that no malarial parasites were found on repeated examinations, she was treated with quinine with little effect. On admission to the hospital physical examination was entirely negative. Her temperature showed a sharp rise in the afternoon of every third day to 104°. This was preceded sometimes by a half hour of malaise and sweating. Her clinical pathology was little help. At the height of one chill her white count was 22,000. At other times it was between 7,000 and 8,000. Blood culture was questionably positive. Her urine showed occasional white cells. Dr. Christian called the case one of bacterial allergy and probably a meningococcus septicemia which gives somewhat the same picture.

The second case was a neurological patient presented by Dr. Scarff. The patient was a 12 year old boy who came into the hospital complaining of convulsive attacks of 10 years duration. He was the youngest of six children; the other five having died before the age of ten. The athetoid convulsions started after an attack of measles and occurred chiefly in the left arm. He was found to have congenital visual defect, marked myopia, some lenticular opacity, precocious development of external genitalia and marked calcium deficiency, it being 2.6 mgms per 100 cc of blood, the normal being 10 mgms per 100 cc. X-ray showed a denseness of the bones of the skull face and spine with separation of the coronal suture and poorly developed teeth. A positive Chvostek was obtained on the face. Dr. Cushing pointed out that it was interesting that the patient had a little hydrocephalus, obscure calcification of some kind and undoubtedly a pineal disturbance. The relation of pinealismus to evidences of tetany seemed obscure. The patient was sent to the Children's Hospital for investigation.

Generalization from the study of protein anaphylaxis to other forms of hypersensitiveness such as asthma and certain food and drug idiosyncrasies. Dr. Zinsser pointed out, has met with many obstacles the chief of which has been the difficulty of repeating experiments on passive sensitization with antibody containing sera. Our knowledge of bac-

sand population Human life has been extended upon the average from about 25 years to 57 years

Such an organization has naturally builded itself in the hearts of the people It reaches into every home where a baby comes It has been natural that from time to time uninformed politicians have sought to secure control of such an organization—never realizing that its every power would be vitiated and destroyed were it for an instant made the tool of party or personal politics

Profoundly grateful to Almighty God humbled by the great responsibility which has been placed upon it by your confidence we invite you to join with us in reconsecrating ourselves in a determined movement to make Kentucky the healthiest, and its people the happiest and most useful citizens of our country

Given under our hands and seal of the State Board of Health, this March 16th, 1928

J E WEISS, *President*

A T MCCORMACK, *Secretary*

INFORMATION WANTED

April 16 1928

To the Editor of the N E JOURNAL OF MEDICINE,
Boston, Mass

Who was it that painted The Good Physician? Who stored his saddleback with simples and balm and tonics? May Eos Mother of Dawn long light his way and keep his vision clear! Long may he continue to loose winged words!

It is cheering that there are still with us some—one anyway—who can preach helpful and hopeful sermons and deliver them in a charming classic style Please give him liberal space for his matured thought is much needed by the younger doctors and appreciated by the older ones too

Sincerely

JOHN D OR CHIONEATO

NEWS ITEMS

APPOINTMENT OF DR WALTER B CANNON—
Dr Walter B Cannon of Harvard Medical School has been appointed as a member of the Council of the National Academy of Scientists

NEW YORK CONSUMPTIVES ON WAITING LIST

Two hundred cases of tuberculosis are on the waiting list at the Hospital Admission Bureau of New York despite the fact that a year ago there were more vacancies than there were cases for admission The waiting list is due partly to the tearing down of shacks at the Otisville Sanatorium and partly to an increase in the disease attributed to the large amount of unemployment

GRANT TO GORGAS INSTITUTE RECOMMENDED

The Senate Committee on Foreign Relations has ordered a favorable report on the bill authorizing an annual appropriation of \$50 000 to be paid to the Gorgas Memorial Institute of Tropical and Preventive Medicine in Panama

The gift is dependent upon the completion of the Institute within five years

NOTICES

DENTISTRY AND MEDICINE

A meeting of unusual interest is to be held at the Hotel Statler during the Convention of the Massachusetts Dental Society, on Thursday, May 10th from 2 to 5 P M when the Section on Children Dentistry meets to listen to the address of Dr C Johnson on The Highest Function of the Dentist A Clinic will follow his address

The very rapid strides made in preventive work in dentistry in recent years and the recognition of the relation of oral health to general health makes this an opportunity to hear from a recognized authority the latest views regarding the work of the dentist in maintaining health Physicians are invited to this meeting It is hoped that many may attend There must be closer cooperation of dentist and physician if each is to do his full duty to his patient

CONFERENCE ON RHEUMATIC DISEASES

TO BE HELD AT BATH 10TH AND 11TH MAY, 1928

PRESIDENT OF THE CONFERENCE

Sir George Newman KCB, Hon DCL, LL.D., MD, FRCP DPH Chief Medical Officer, Ministry of Health

SESSIONS AND PRESIDENTS

- 1 Social Aspects The Right Hon Lord Dawson of Penn GVO KCB KCMG, Hon LL.D., MD FRCP Physician to H M the King
- 2 Causation Sir Humphry Rolleston Bt. KCB, Hon DSc DCL LL.D MD, FRCP, Physician to H M the King Regius Professor of Physic, University of Cambridge
- 3 Treatment Sir E Farquhar Buzzard, KCV.O., MA MD FRCP Physician to H M the King, Regius Professor of Medicine University of Oxford.

ORGANIZING COMMITTEE

F G Thomson MA MD FRCP, Chairman
Vincent Coates MC MA MD MRCP, Hon Medical Secretary 10 Circus Bath Tel 776 John Hatton Hon Organizing Secretary the Pump Room Bath Tel 9 Rupert Waterhouse, MD MRCP R G Gordon MD DSc FRCP E

WORCESTER NORTH CANCER CLINIC MEETS TUESDAYS AT 10 A M

At Burbank Hospital—May 22 June 12 July 3 and 24 August 14 September 4 and 25 October 16 November 6 and 27, December 18

At Leominster Hospital—May 8 and 29 June 19, July 10 and 31, August 21 September 11 October 2 and 23 November 13 December 4 and 25

At Henry Heywood Memorial Hospital—May 15, June 5 and 26 July 17 August 7 and 28 September 18, October 9 and 30 November 20 December 11

Any physician referring a case of suspected cancer to the Clinic will receive a letter giving diagnosis and recommendations as to treatment If the physician so requests treatment will be undertaken by the Clinic to which the patient is referred otherwise the patient will be returned to his own physician with suggestions for appropriate treatment

al studies and dissected eighty different species of animals. In 1618 he was appointed King's physician and served in that capacity for James I and Charles I.

In 1616 he began his lectures in the College of Physicians of which are still preserved in the British Museum. The lectures make many references to Hippocrates, Galen and others with whom Harvey was thoroughly familiar. Nine pages of these notes dealt with the vascular system. In these he speaks of the circulation of the blood and the pumping action of the heart. In 1628 his book, *De Motu Cordis*, appeared. Why it wasn't published sooner isn't known, but it first led Harvey to the idea of circulating blood, the existence of many valves in the veins and in his book he takes up this aspect. He speculates on the origin of the heartbeat but takes no account of the influences of the innervation and respiration upon circulation though he is aware of the aid to circulation by muscular action.

Malloch then gave a few of Harvey's eccentricities told of his being bothered by gout and sciatica and of his honorary M.D. from Oxford in 1645. Harvey refused the presidency of the college at Cambridge at the age of 64 due to ill health and in 1656 he discontinued his lectures and a few years later died probably of cerebral hemorrhage. The funds from his estates as provided by his will, were used to found a library, pay the librarians and finally to establish a lecture to be given once a year. The first lecture was delivered in 1656 and they have been continued since then. The meeting was well attended and made doubly interesting by lantern slides and an exhibit of some of his original works of Harvey.

THE ANNUAL MEETING OF THE MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY

At the regular Annual Meeting of the Middlesex South District Medical Society held April 18 the following officers were elected for the ensuing year: President, Augustus W. Dudley, Cambridge; Vice-President, Fresenius Van Nys, Weston; Secretary, Stephen M. Biddle, Cambridge; Treasurer, Edward Vellus, Newton; Commissioner of Trials, Edwin P. Stickney, Arlington; Member of the Nominating Committee of the Massachusetts Medical Society, Edmund H. Stevens, Cambridge; Alternate, Thomas M. Dunrell, Somerville; Censors, Charles F. K. Bean, Medford; Conrad L. Waltham, Norman; M. Hunter, Hudson; Fred Jonett, Cambridge; John McLean, Somerville; Orator, Arthur H. Ring, Arlington; For Councillors, District No. 1—Edmund H. Stevens, James W. Seaver, Willard A. Putnam, Hollis; Seavey A. C. Potter, John P. Nelligan, W. Stewart, Littlemore; District No. 2—Clarence H. Staples, Henry J.aney, Fritz, Walter G. Ralph, W. McAllester; District No. 3—Frederick G. Smith, Charles E. Morgan, Allen H. Blake, Walter T. Burke, Thomas Dunrell, Charles F. K. Bean; District No. 4—Charles B. Fuller, Harold R. Webb, Ed A. Higginbotham, Henry Joel Wolcott; District No. 5—Edward A. Andrews, Francis G.

Curtis, Lewis H. Jack, Irving L. Fisher, Edward Mellins, Walter H. Crosby, Hartley W. Thayer, District No. 6—Dana F. Cummings, Cora E. Harri-man.

District No. 7—Fresenius Van Nys; For Auditors, Arthur N. Makechnie, Alvah C. Cummings, Josephine D. Kable.

The report offered by the Committee appointed following the October 1927 meeting to consider the question of recompense for hospitals and doctors in industrial and auto accident cases was accepted together with accompanying resolutions. A questionnaire was sent out in December 1927 to the Superintendents of hospitals in the industrial cities outside of Boston and to about twenty towns. The area covered included hospitals serving from 65% to 75% of the industrial population of the State.

Dependable information was obtained from fifty-seven hospitals. Only one of the thirty-eight industrial cities supporting a local hospital failed to return a full or partial report. Twelve towns reported.

Forty-nine hospitals classified insured patients as private or semi-private.

Some nine of ten other hospitals were considering such action. Thirty-one favored uniting to charge a cost rate for hospital service. Thirty favored uniting to refuse providing free medical service. Thirty-two reported on average per capita cost \$5.06 per day.

The meeting voted to endorse the principle of a cost rate for hospital service and a paid Medical Service for insured patients in charitable hospitals. It also voted to instruct the councillors of the district to unite in securing action by the State Society.

Dr. Birnie, President of the State Society, was present and urged all members to attend the Annual Meeting at Worcester in June. He also spoke concerning the proposed new home for the State Society and explained what it would mean in increased convenience and efficiency.

CANCER MEETING UNDER THE AUSPICES OF THE BOSTON COUNCIL OF SOCIAL AGENCIES

There were well over 100 social workers in attendance at the meeting held April 26 at Pilgrim Hall, 14 Beacon Street.

Mr. Kelso presided and introduced Dr. John C. A. Gerster, chairman of the Cancer Committee of the City of New York, who told how the New York cancer program had been carried out and the success which had attended the efforts to interest the public. He stated that the support given by the press was most helpful, there having been more than 2000 inches of newspaper publicity during the campaign.

Urging the public to have complete physical examinations was supplemented by a leaflet telling what should constitute such an examination and this leaflet in turn was sent to the physicians to inform them of what their patients would expect.

Over 1,000,000 pieces of cancer literature were distributed through the public and parochial schools of New York.

Talks in New York were limited to 20 minutes, but questions frequently took up over two hours. The Commission, he said, was necessary as it usually takes three times as long to arrange for the meetings as for the actual time of the meetings.

Miss Ora M. Lewis of the Massachusetts General Hospital Social Service Department, gave a forceful

terial allergy is still somewhat sketchy and yet much has been done. It has been shown that the bacterial antigen consists of two functional fractions, one, a nitrogenous nucleoprotein like material which itself gives a loose species specificity rather than a type specificity on immunization; the other, probably of carbohydrate structure, and called the "soluble specific substance" will not cause antibody formation of any kind. These two fractions tend to dissociate most easily, but attempts to put them together again have so far been unsuccessful.

An example of this is seen in the tuberculin reaction. Three facts are gleaned from this study first, it is the presence of the tubercle bacilli which incites a specific reaction; next, that the antigenic stimulus is not released from bacilli except by the presence of tissue reactions; and third, the injection of chemically produced tubercle bacillus cleavage products are not capable of eliciting more than a feeble allergy. A coordination of the known facts leads us to conclude that tuberculin allergy is a reaction stimulated by a specific product of the tubercle bacillus body, an antigen which is potentially liberated in the inflammatory foci under the influence of tissue reactions, probably by a process of lysis. After a checkup on these general conclusions with the pneumococcus, Dr Zinsser concludes that bacterial allergy becomes a simple immunological reaction in which characteristic development and typical reaction depend upon an antigen which cannot be produced in its full functional activity except by the gentle biological process of lysis or autolysis.

Dr Zinsser then discussed allergy and rheumatism. From the fact that typical articular and pericardial exudates are usually sterile one may conclude that while acute articular rheumatism and associated conditions in their ultimate etiology are very probably bacterial infections, the actual condition of the joints themselves is not the result of local invasion by these bacteria. One is then confronted with three possibilities. Either the joint conditions are the result of local invasion by an organism not yet known or perhaps a filterable virus, or second, a toxic effect due to direct entrance into the joints of a bacterial poison, or finally, an allergic reaction following contact of a bacterial antigen with the joint tissues of a body specifically sensitive to this microorganism. Causation by a specific toxin would necessitate the assumption of a single specific organism which is inconsistent with the varieties of streptococci which have been isolated.

On the subject of allergy and rheumatism Dr Zinsser has done much recent work. Certain conclusions he draws from the results. A definitely anaphylactic condition—serum sickness—is accompanied by joint symptoms showing many analogies to articular rheumatism. Second, in acute articular rheumatism the joint fluids are usually sterile. Third, in animals following bacterial injection that develop joint lesions, the same is true. Last, experimentally it appears that the sensitiveness of joints can be demonstrated as to some extent parallel to general sensitiveness. Not only are these true but the allergic explanation is consistent with the variety of organisms that have been isolated and with the frequency with which exposures etc. are associated with onsets of rheumatism. Therefore Dr Zinsser is led to the belief that the allergic explanation is a logical one for at least a considerable proportion of such cases and more consistent with clinical and

experimental facts than any other available explanation at the present time.

STATED MEETING—APRIL 24

A stated meeting of the Harvard Medical Society was held at the Peter Bent Brigham Hospital on April 24, 1928, at 8 15 o'clock. The program was arranged to celebrate the tercentennial of the publication of Harvey's *De Motu Cordis*. After the presentation of cases Dr Harvey Cushing introduced Dr Archibald Malloch, Librarian of the New York Academy of Medicine and the speaker of the evening.

The first case was from the medical service, and presented by Dr Fitzhugh. The patient was a 62 year-old lady who came to the hospital because of loss of weight. She had been treated for diabetes for 15 years, and much of that time had been on a 1500 calorie diet. During the last three years she had lost 54 pounds. In the hospital on a diet of 2200 calories she gained a little. Physical examination showed a slightly enlarged heart, an umbilical hernia, and both kidneys were palpable. She was presented to show marked varicose veins which she said she had had all her life. During each pregnancy they had enlarged while in between times they were less uncomfortable. Twenty years ago she had a varicose ulcer on the right leg six different times but none since then. Dr Christian pointed out that since it was the veins and their valves which first led Harvey to his wonderful discovery, the presentation of this case was particularly appropriate.

The second case was presented by Dr Oljenick. The patient was a young girl who had been presented to the society some time previously—a case of bilateral cervical rib which was characterized by the absence of neurological findings and by the presence of vasomotor symptoms. On operation a curved incision was made along the upper border of the clavicle. The subclavian artery was not seen, nor even when the scalenus anticus muscle was divided. A fibrous band was found and when this was cut, the subclavian artery stretched out flat. It was firm and thrombosed. Ten days after operation a new nurse discovered a radial pulse which was feeble. It was a question of canalization of the thrombus or improvement of the collateral blood supply. Dr Cushing, who did the operation, explained that he probably was mistaken about the thrombosis. The artery had not given the impression of having normal circulation as soon as the constriction was removed, but it is very possible said Dr Cushing, that there may have been a vasomotor constriction or that the long standing constriction had prevented the vessel from immediately filling.

Dr Malloch pointed out that the celebration was for three anniversaries: the publication of Harvey's book in 1628, the birth of Malpighi in 1628 and the birth of John Hunter, the father of surgery in 1728. He then gave a very graceful and beautiful account of Harvey's life.

William Harvey was the eldest of seven sons. After being educated at King's School in Canterbury, he received an M.D. from Padua in 1602 and an M.D. from Cambridge in 1607. He married in 1604 but had no children. He began his work at St Bartholomew's Hospital where he was appointed assistant physician in 1609. On the side he pursued his ana-

real studies and dissected eighty different species of animals. In 1618 he was appointed King's physician and served in that capacity for James I and Charles I.

In 1616 he began his lectures in the College the notes of which are still preserved in the British Museum. The lectures make many references to Aristotle, Galen and others with whom Harvey was thoroughly familiar. Nine pages of these notes dealt with the vascular system. In these, he speaks of the circulation of the blood and the pumping action of the heart. In 1628 his book *De Motu Cordis* appeared. Why it wasn't published sooner isn't known.

First led Harvey to the idea of circulating blood was the existence of many valves in the veins and in this book he takes up this aspect. He speculates on the origin of the heartbeat but takes no account of the influences of the lungs and respiration upon circulation though he is aware of the aid to circulation by muscular action.

Dr. Maillach then gave a few of Harvey's eccentricities told of his being bothered by gout and sciatica and of his honorary M.D. from Oxford. In 1645 Harvey refused the presidency of the college at Cambridge at the age of 64 due to ill health and age. In 1656 he discontinued his lectures and a few years later died probably of cerebral hemorrhage. The returns from his estates as provided by his will, were used to found a library pay the librarians salary and finally to establish a lecture to be given once a year. The first lecture was delivered in 1656 and they have been continued since then.

The meeting was well attended and made doubly interesting by lantern slides and an exhibit of some of the original works of Harvey.

THE ANNUAL MEETING OF THE MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY

At the regular Annual Meeting of the Middlesex South District Medical Society held April 18 the following officers were elected for the ensuing year: For President, Augustus W. Dudley, Cambridge; For Vice-President, Fresenius Van Nuys, Weston; For Secretary, Stephen M. Biddle, Cambridge; For Treasurer, Edward Mellus, Newton; For Commissioner of Trials, Edwin P. Stickney, Arlington.

For Member of the Nominating Committee of the Massachusetts Medical Society, Edmund H. Stevens, Cambridge.

For Alternate, Thomas M. Durrell, Somerville; For Censors, Charles F. K. Bean, Medford; Conrad Bell, Waltham; Norman M. Hunter, Hindsdon; Fred R. Jouett, Cambridge; John McLean, Somerville; For Orator, Arthur H. Ring, Arlington; For Councillors, District No. 1—Edmund H. Stevens, James W. Seaver, Willard A. Putnam, Hoffs; L. Seaver, A. C. Potter, John P. Neiffigan, W. Stewart, Whittemore.

District No. 2—Clarence H. Staples, Henry J. Keane, Fritz Walter, Gay, Ralph W. McAllester; District No. 3—Frederick G. Smith, Charles E. Mongan, Allen H. Blake, Walter T. Burke, Thomas M. Durrell, Charles F. K. Bean; District No. 4—Charles B. Fuller, Harold R. Webb, Fred A. Higginbotham, Henry Josef Woicott; District No. 5—Edward A. Andrews, Francis G.

Curtis, Lewis H. Jack, Irving L. Fisher, Edward Mellus, Walter H. Crosby, Hartley W. Thayer; District No. 6—Dana F. Cummings, Cora E. Harri-man.

District No. 7—Fresenius Van Nuys.

For Auditors, Arthur N. Makechnale, Alvah C. Cummings, Josephine D. Kable.

The report offered by the Committee appointed following the October 1927, meeting to consider the question of recompense for hospitals and doctors in industrial and auto accident cases was accepted together with accompanying resolutions. A questionnaire was sent out in December 1927, to the Superintendents of hospitals in the industrial cities outside of Boston and to about twenty towns. The area covered included hospitals serving from 65% to 75% of the industrial population of the State.

Dependable information was obtained from fifty-seven hospitals. Only one of the thirty-eight industrial cities supporting a local hospital failed to return a full or partial report. Twelve towns reported.

Forty-nine hospitals classified insured patients as private or semiprivate.

Some nine of ten other hospitals were considering such action. Thirty-one favored uniting to charge a cost rate for hospital service. Thirty favored uniting to refuse providing free medical service. Thirty-two reported on average per capita cost \$5.06 per day.

The meeting voted to indorse the principle of a cost rate for hospital service and a paid Medical Service for insured patients in charitable hospitals. It also voted to instruct the councillors of the district to unite in securing action by the State Society.

Dr. Birnie, President of the State Society, was present and urged all members to attend the Annual Meeting at Worcester in June. He also spoke concerning the proposed new home for the State Society and explained what it would mean in increased convenience and efficiency.

CANCER MEETING UNDER THE AUSPICES OF THE BOSTON COUNCIL OF SOCIAL AGENCIES

There were well over 100 social workers in attendance at the meeting held April 26 at Pilgrim Hall 14 Beacon Street.

Mr. Kelso presided and introduced Dr. John C. A. Gerster, chairman of the Cancer Committee of the City of New York, who told how the New York cancer program had been carried out and the success which had attended the efforts to interest the public. He stated that the support given by the press was most helpful there having been more than 2000 inches of newspaper publicity during the campaign.

Urging the public to have complete physical examinations was supplemented by a leaflet telling what should constitute such an examination and this leaflet in turn was sent to the physicians to inform them of what their patients would expect.

Over 1,000,000 pieces of cancer literature were distributed through the public and parochial schools of New York.

Talks in New York were limited to 20 minutes but questions frequently took up over two hours. The Commission he said was necessary as it usually takes three times as long to arrange for the meetings as for the actual time of the meetings.

Miss Ora M. Lewis of the Massachusetts General Hospital Social Service Department, gave a forceful

terial allergy is still somewhat sketchy and yet much has been done. It has been shown that the bacterial antigen consists of two functional fractions—one, a nitrogenous nucleoprotein-like material which itself gives a loose species specificity rather than a type specificity on immunization, the other, probably of carbohydrate structure, and called the "soluble specific substance" will not cause antibody formation of any kind. These two fractions tend to dissociate most easily, but attempts to put them together again have so far been unsuccessful.

An example of this is seen in the tuberculin reaction. Three facts are gleaned from this study: first, it is the presence of the tubercle bacilli which incites a specific reaction; next, that the antigenic stimulus is not released from bacilli except by the presence of tissue reactions; and third, the injection of chemically produced tubercle bacillus cleavage products are not capable of eliciting more than a feeble allergy. A coordination of the known facts leads us to conclude that tuberculin allergy is a reaction stimulated by a specific product of the tubercle bacillus body, an antigen which is potentially liberated in the inflammatory foci under the influence of tissue reactions, probably by a process of lysis. After a checkup on these general conclusions with the pneumococcus, Dr Zinsser concludes that bacterial allergy becomes a simple immunological reaction in which characteristic development and typical reaction depend upon an antigen which cannot be produced in its full functional activity except by the gentle biological process of lysis or autolysis.

Dr Zinsser then discussed allergy and rheumatism. From the fact that typical articular and pericardial exudates are usually sterile, one may conclude that while acute articular rheumatism and associated conditions in their ultimate etiology are very probably bacterial infections, the actual condition of the joints themselves is not the result of local invasion by these bacteria. One is then confronted with three possibilities: Either the joint conditions are the result of local invasion by an organism not yet known or perhaps a filterable virus; or second, a toxic effect due to direct entrance into the joints of a bacterial poison; or finally, an allergic reaction following contact of a bacterial antigen with the joint tissues of a body specifically sensitive to this microorganism. Causation by a specific toxin would necessitate the assumption of a single specific organism, which is inconsistent with the varieties of streptococci which have been isolated.

On the subject of allergy and rheumatism Dr Zinsser has done much recent work. Certain conclusions he draws from the results: A definitely anaphylactic condition—serum sickness—is accompanied by joint symptoms showing many analogies to articular rheumatism. Second, in acute articular rheumatism the joint fluids are usually sterile. Third, in animals following bacterial injection that develop joint lesions, the same is true. Last, experimentally it appears that the sensitiveness of joints can be demonstrated as to some extent parallel to general sensitiveness. Not only are these true, but the allergic explanation is consistent with the variety of organisms that have been isolated and with the frequency with which exposures etc. are associated with onsets of rheumatism. Therefore Dr Zinsser is led to the belief that the allergic explanation is a logical one for at least a considerable proportion of such cases and more consistent with clinical and

experimental facts than any other available explanation at the present time.

STATED MEETING—APRIL 24

A stated meeting of the Harvard Medical Society was held at the Peter Bent Brigham Hospital April 24, 1928, at 8 15 o'clock. The program was arranged to celebrate the centennial of the publication of Harvey's "De Motu Cordis." After the presentation of cases Dr Harvey Cushing introduced Dr Archibald Malloch, Librarian of the New York Academy of Medicine, and the speaker of the evening.

The first case was from the medical service, as presented by Dr Fitzhugh. The patient was a 6 year old lady who came to the hospital because of loss of weight. She had been treated for diabetes for 15 years, and much of that time had been on a 1500 calorie diet. During the last three years she had lost 54 pounds. In the hospital on a diet of 2200 calories she gained a little. Physical examination showed a slightly enlarged heart, an umbilical hernia, and both kidneys were palpable. She was presented to show marked varicose veins which she said she had had all her life. During each pregnancy they had enlarged, while in between times they were less uncomfortable. Twenty years ago she had a varicose ulcer on the right leg six different times, but none since then. Dr Christian pointed out that since it was the veins and their valves which first led Harvey to his wonderful discovery, the presentation of this case was particularly appropriate.

The second case was presented by Dr Olfenick. The patient was a young girl who had been presented to the society some time previously,—a case of bilateral cervical rib which was characterized by the absence of neurological findings and by the presence of vasculomotor symptoms. On operation a curved incision was made along the upper border of the clavicle. The subclavian artery was not seen, not even when the scalenus anticus muscle was divided. A fibrous band was found and when this was cut the subclavian artery stretched out flat. It was firm and thrombosed. Ten days after operation a new nurse discovered a radial pulse which was feeble. It was a question of canalization of the thrombus or improvement of the collateral blood supply. Dr Cushing who did the operation explained that he probably was mistaken about the thrombosis. The artery had not given the impression of having normal circulation as soon as the constriction was removed but it is very possible said Dr Cushing that there may have been a vasomotor constriction or that the long standing constriction had prevented the vessel from immediately filling.

Dr Malloch pointed out that the celebration was for three anniversaries: the publication of Harvey's book in 1628, the birth of Malpighi in 1628, and the birth of John Hunter, the father of surgery in 1728. He then gave a very graceful and beautiful account of Harvey's life.

William Harvey was the eldest of seven sons. After being educated at King's School in Canterbury he received an M.D. from Padua in 1602 and an M.D. from Cambridge in 1607. He married in 1604, but had no children. He began his work at St Bartholomew's Hospital where he was appointed assistant physician in 1609. On the side he pursued his ana-

Norfolk District Medical Society

May 3—Censors meeting Roxbury Masonic Temple
M.
May 9—Annual Meeting Complete notice appears
page 602.

Suffolk District Medical Society

May 3—Censors Meeting
The Censors of the Suffolk District Medical Society
will meet for the examination of candidates at
the Medical Library No 8 The Fenway Thurs-
day May 3 1928 at 4 o'clock.

Notices of meetings must reach the JOURNAL office on the
day preceding the date of issue in which they are to appear

BOOK REVIEWS

Surgical Treatment of Malignant Disease
By HOLBURN J WARING Oxford University Press,
1928

There has been a dearth of authoritative state-
ments on the surgery of malignant disease other than
articles in the various medical periodicals. This
book by Sir Holburn J Waring is a very welcome ad-
dition to the literature on this subject.

The book is pleasingly written and with a number
of excellent illustrations a number of which are
skillfully reproduced in color. Occasionally one
sees the same illustration in two different localities

which perhaps is not as instructive as though
different ones had been provided. One point which
is somewhat confusing to American readers is
the use of the term myeloma as a synonym for
osteosarcoma or tumor of bone. The mass of statistics
drawn from the St. Bartholomew's Hospital records
is of much interest and adds considerably to our
statistical data. One very valuable feature is an
excellent diagram of the lymphatic drainage of each
portion of the body and the points at which metastasis
may be expected.

It is both surprising and refreshing to an American
reader to find many references to American literature
which so frequently has been overlooked by
continental and British writers.

The most interesting and perhaps the most valuable
chapter in the book is the first, devoted largely
to general considerations. The author's attitude
throughout is conservative and his knowledge obviously
based on a very wide personal experience.

Muscle Function by WILHELMINE G WRIGHT (Boston)
With a Foreword by J Playfair McMurrich Pro-
fessor of Anatomy University of Toronto Paul B
Hoebner Inc New York 1928

The authoress Miss Wright, has been in charge of
muscle re-education work in the large private
clinic of the late Dr Robert W Lovett for over twenty
years. A very unusual opportunity has been af-
forded her to study muscle function. She has evident-
ly made most thoughtful and intelligent use of this
opportunity. Anatomists and physiologists usually
study muscle function in normal subjects. Muscle
action is complex and it is often difficult to isolate
muscle and to evaluate its exact action as apart
from the action of other members of its group or un-
influenced by the action of its antagonists.

The disease anterior poliomyelitis or infantile par-
alysis may affect almost any of the muscles of the
body and throw them wholly or partly out of func-

tion. Dr Lovett's wide reputation has brought to his
office large numbers of patients suffering from the
effects of this disease. The peculiar opportunity which
was thus presented to Miss Wright's acute, highly
trained mind is evident. She has studied literature
thoroughly and assayed it critically in the light of
her own observations. She is familiar with
Duchenne's great epochal work *Physiologie des
Mouvements* published in 1867 and with Beever's
later Croonian Lectures. She accepts his theory of
the synergists but is often able to add new knowl-
edge and to prove that some of Beever's and
Duchenne's observations were faulty. She comes to
the conclusion for instance that a group of muscles
designed for one movement and their sequence in that
movement can both be altered if the need arises.
When that group is disturbed as by an operative
tendon transplantation it may however, require
much patient re-education before the newly arranged
muscle functions securely. This seems to disprove
the old belief held by Beever that muscles are always
ennervated functionally from one center in the central
nervous system.

The sections on the Principles of Muscle Action
Leverage Two Joint Muscles Antagonists Group In-
nervation and Timing are clearly written easy to
follow, and well illustrated. Her experiments to de-
termine the exact action of individual muscles and
muscle groups are ingenious and to us the conclu-
sions which she draws from them are rational.

Not the least valuable part of this small book of
less than two hundred pages is the last twenty pages
in which is given a list of the muscles and a descrip-
tion of the movements in which each takes part.

The book should be read and reread by every phy-
sician having to do with muscle education (and what
physician should not have to do with muscles) and
by every physiotherapist and physical trainer. We
know of no volume in English which offers such a
compact, reliable and helpful book of reference in re-
lation to muscle function. Miss Wright has made
a real contribution.

Physical Diagnosis By CHARLES PHILLIPS EMERSON
A B M D Professor of Medicine Indiana Univer-
sity School of Medicine Pp 553 Philadelphia
W B Saunders Company 1928

It is no simple task for an author to justify the
addition of another textbook in the widely trav-
ersed field of physical diagnosis. Such a book must
have modernity, originality, a presentation appealing
to the eye and mind of the student and numerous
and excellent illustrations. All of these features are
amply represented in this first edition of Dr Emer-
son's.

The usual arrangement is followed here begin-
ning with the general physical characteristics and
body surface and then proceeding from the head to
the extremities. These are all well covered though
the dermatologic section is sketchy being too ambi-
tious in scope. The sections on the lungs and heart
are particularly good. Notwithstanding the author's
introductory definition as 'examination
through the use of the unaided special senses',
there are many who feel that the graphic methods in
studying cardiac arrhythmias are too important to
be ignored and some space should be devoted to this
subject. In this hey-day of periodic physical exam-
inations a tabulated outline would be helpful. The
bold faced type for points of emphasis and the nu-

paper showing how the social worker can help interpret the problems and direct the plans for social treatment. The workers were urged to have a right point of view and to instill hope and not fear into their patients, and under no circumstances to allow the patient to sit and do nothing. Finally the workers were urged to consider and make their work a privilege and not a mere duty and to individualize each case.

Commissioner of Public Health, Dr George H Bigelow, followed with one of his unreportable talks, where paradox, startling statement, wit and stunning blows follow each other with a rapidity that makes the audience sit on the edge of their chairs in their attempt to follow the speaker. His emphasis was on the need of well directed social work by the very best that the profession had to offer. He clinched the points made by Miss Lewis. At the same time he showed how clearly he appreciated the difficulties that the cancer problem presented to the social worker, the physician and the public health officer, not omitting to poke fun at himself and his associates.

The meeting closed with a motion picture illustrating phases of the cancer problem exceedingly well, a picture which should encourage anyone who feared he had cancer.

MEETING OF THE HAMPDEN DISTRICT MEDICAL SOCIETY

On April 24 at 4 P M the Hampden District Medical Society held its annual meeting at the Hotel Kimball in Springfield.

The newly elected officers are President Edw P Bagg, Jr, Holyoke Vice-President, Dudley Carleton Springfield Secretary Treasurer, H L Smith Springfield.

A description of the coming State meeting in Worcester was given by John M Birnie, President of the Massachusetts Medical Society.

Allen G Rice read a paper on the Cerebrospinal Fluid System and Ernest L Davis gave an illustrated X ray talk on the Developmental Defects in the Lumbo-Sacral Region. Dinner was held at 6 P M.

HARVARD MEDICAL SOCIETY

The next regular meeting of the Harvard Medical Society will be held as usual in the amphitheatre of the Peter Bent Brigham Hospital, Tuesday evening May 8th, at 8 15 P M. The program follows:

- 1 Presentation of cases
- 2 Management of simple obesity in an outpatient clinic Miss Thelma Tubbs (30 minutes)
- 3 Studies in experimental production of lung abscess Dr John E Scarff (30 minutes)

PERCIVAL BAILEY, *Secretary*

MEETING OF THE NEW ENGLAND WOMEN'S MEDICAL SOCIETY

This meeting will be held at the Harvard Medical School, Longwood Avenue Warren Museum (centre building, top floor), Wednesday, May 9, 1928, at 8 00 P M.

Dr Myrtle Moore Canavan Curator of the Warren Museum will speak on the 'Need of Publishing Clinical Material'.

Dr John B Hawes, President of the Boston Tuberculosis Association, will give a brief talk film relative to the "Early Diagnosis of Tuberculosis" will be exhibited.

Dr Canavan will demonstrate the museum's collections before and after the meeting proper. Refreshments will be served.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

The regular meeting of the Essex South District Medical Society was held at the Essex Sanatorium April 11, 1928. At the clinical session held at 1 P M, cases were shown illustrating different types of chest conditions. The clinical meeting was followed by the exhibition of moving pictures dealing with tuberculosis and also several reels showing preparation of various sera and vaccines.

A buffet supper was followed by a talk given by Dr Raymond S Titus of Boston on 'Obstetrical Emergencies'. Attendance 55.

WM T HOPKINS, *Reporter*

Annual Meeting of the Essex South District Medical Society, Tuesday, May 8, 1928, at "The Tavern" Gloucester.

Speaker Willard C Rappleye, M D, of New Haven Connecticut, Director of Study for the Commission on Medical Education. Subject, "Medical Training in Relation to General Education and Medical Practice." Ladies invited. Social hour and dancing follow the speaking.

NORFOLK DISTRICT MEDICAL SOCIETY

The Annual Meeting of Norfolk District Medical Society will be held at Hotel Kenmore, May 9, 1928, at 5 30 P M. Business meeting at 5 30, dinner at 6 30. Immediately following the dinner there will be a talk by Mr E E Whiting of the *Boston Herald* on the conclusion of Mr Whiting's talk the members will be entertained by Mr Charles C Gilman.

The meeting is planned to be a real get together and will be strictly non-medical.

All members are urged to attend.

F S CRUTCHSHANK, *Secretary*
23 Bay State Road

SOCIETY MEETINGS

May 8—Harvard Medical Society. Detailed notice appears on page 602.

May 9—Meeting of the New England Women's Medical Society. Complete notice appears on page 602.

May 10 11—Conference on Rheumatic Diseases. Detailed notice appears on page 472. Issue of April 19.

June 18 20—Meeting of the American Association for the Study of Gout. See page 425. Issue of April 12. Complete notice.

June 18 22—Convention of the Catholic Hospital Association. Complete notice appears on page 1597, Issue February 16.

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

May 3, 1928 (Thursday)—Censors meet for examination of candidates at Hotel Bartlett 95 Main Street, Harvard Hill at 2 P M.

Essex South District Medical Society

May 3 (Thursday)—Censors meet at Salem Hospital for the examination of candidates at 3 30 P M.

May 8—Annual Meeting. Detailed notice appears page 602.

Middlesex South District Medical Society

May 3—Censors meeting. Detailed notice appears page 626. Issue of April 26.

